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VOL. V.] JANUARY, 1897. [No. 49.

# THE ORCHID REVIEW:

## An Illustrated Monthly Journal,

## *DEVOTED TO ORCHIDOLOGY.*

**Contents.**


| | PAGE |
|---|---|
| Amateur's Notes ... ... ... | 11 |
| Angræcum eburneum and its allies ... | 19 |
| A. Brongniartianum ... ... ... | 20 |
| A. eburneum... ... ... ... | 20 |
| A. Giryamæ ... ... ... ... | 21 |
| A. superbum... ... ... ... | 20 |
| Botanical Orchids at Kew ... ... | 3 |
| Calendar of Operations for January ... | 22 |
| Correspondence, &c. ... ... ... | 32 |
| Cypripedium Fred. Hardy (Fig. 3) | 17, 18 |
| Dies Orchidianæ ... ... ... | 5 |
| Hybridist ... ... ... ... | 10 |
| Calanthe × albata ... ... ... | 10 |
| Odontoglossum × crispo-Hallii ... | 10 |
| Maxillaria grandiflora alba ... ... | 32 |
| New Year's Greeting ... ... ... | 9 |
| Notes ... ... ... ... ... | 1 |
| Obituary ... ... ... | 7 |
| Orchid Portraits ... ... ... | 32 |
| "Orchid Review" ... ... ... | 8 |
| Orchids abroad and at home ... ... | 12 |
| Orchids at the Royal Horticultural Society ... ... ... ... | 27 |
| Paphiopedium Charlesworthii (Fig. 2) | 16, 17 |
| Paphiopedium Spicerianum (Fig. 1) ... | 16 |
| Phalænopsis × Schilleriano-gloriosa ... | 4 |
| Sophrocattleya × Calypso ... ... | 3 |
| Vanda Sanderiana ... ... ... | 21 |


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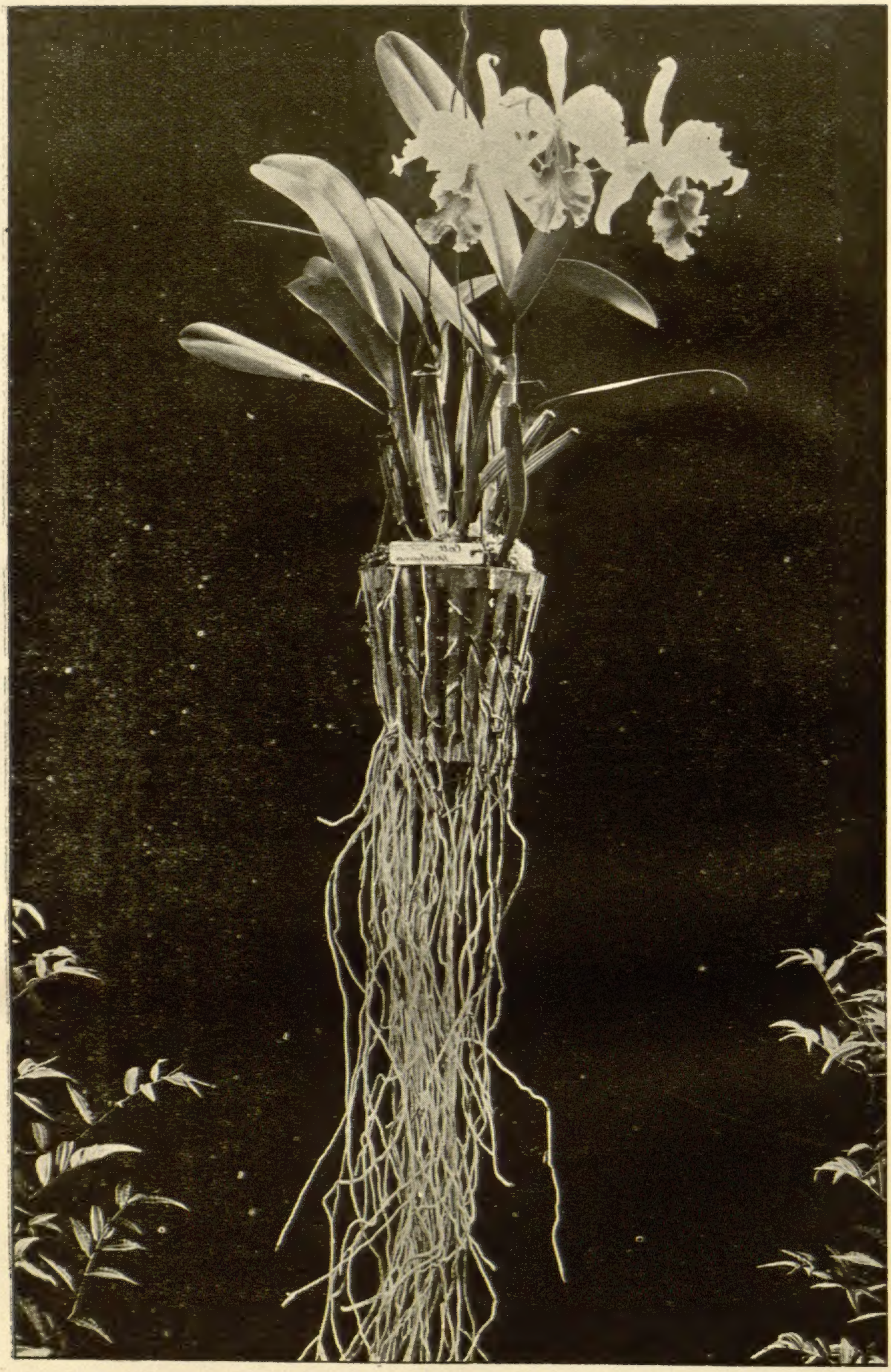

CATTLEYA × HARDYANA.

*(See page* 363.*)*

THE

# ORCHID REVIEW

An Illustrated Monthly Journal

*DEVOTED TO ORCHIDOLOGY*

VOLUME V

1897

London:

MARSHALL BROTHERS, KESWICK HOUSE, PATERNOSTER ROW, E.C.

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Mo. Bot. Garden.
1906

"The Burman books tell us (says Dr. Mason) that the trees round King Wathandria's hermitage were covered with Orchids, and that after being plucked they would retain their fragrance for seven days." King Wathandria (whoever that worthy potentate may have been) must either have been in great favour with the Nâts, supposing, as is highly probable, that they placed the Orchids there for his special delectation ; or, if he were his own collector, he certainly displayed very good taste, and an early appreciation of 'the beautiful' in Nature ; for, assuredly, out of all Flora's choice and bounteous store, nothing could have been drawn more worthy of royal regard. It is with Orchids still that the wealthy and the great love to surround themselves in countries where these lovely flowers are strange and exotic ; and this at a cost which would probably have astonished good King Wathandria, and which, in the aggregate, is worth a king's ransom."—PARISH.

# THE ORCHID REVIEW.

VOL. V.] *JANUARY*, 1897. [No. 49.

## NOTES.

THE next meeting of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, on January 12th, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

A flower from the collection of H. J. Ross, Esq., of Florence, affords some evidence as to whether hybrids come true from seed. It is a seedling from the plant known as Cypripedium × Dauthieri Rossianum, whose history was given at page 20 of our second volume. It was fertilised with its own pollen, and a seedling has now flowered which has the dorsal sepal irregularly striped with green and purple, as in the original form. The first seedling has produced two flowers, and it is interesting to note that the plant comes true from seed. A flower of a second seedling from the same batch has since been sent, but this has reverted to a well-coloured form of ordinary C. × Harisianum.

A flower of Cypripedium insigne Pynaerti is also sent from the same collection, which it is said almost always produces twin-flowered scapes. It is of the C. i. Maulei type, but has rather large blotches on the dorsal sepal.

A fine six-flowered raceme of Cœlogyne barbata is sent from the collection of Sir Frederick Wigan, Clare Lawn, East Sheen, by Mr. Young, together with some good flowers of Sophronitis grandiflora, including the brilliant scarlet variety coccinea, formerly described by Reichenbach as a distinct species. It is much rarer than the typical form.

Cypripedium insigne giganteum, of which we have received a flower from the collection of E. Ashworth, Esq., Harefield Hall, Wilmslow, is an enormous form of this useful old species, presumably out of recent importations. The dorsal sepal is over $2\frac{3}{4}$ inches in diameter, and the petals measure $5\frac{3}{4}$ inches from tip to tip, all the other parts being of corresponding development. In general character it somewhat approaches C. i. Chantini.

An inflorescence of the beautiful Phalænopsis amabilis has been sent from the collection of F. M. Burton, Esq., Highfield, Gainsborough, showing how effective it is as a winter-blooming Orchid, in localities where fogs are not prevalent enough to destroy them. Good flowers of Cypripedium × Leeanum, C. × Mrs. Canham, and Lælia anceps are also sent.

A flower of Odontoglossum apterum candidulum has been sent from the collection of J. Wilson Potter, Esq., of Croydon. It is a very beautiful albino, which was formerly known as O. nebulosum candidulum, the older specific name having been lost sight of.

A very pretty form of Odontoglossum crispum, called O. c. ashlandense, has been sent from the collection of R. Ashworth, Esq., Ashlands, Newchurch, near Manchester, in which the flowers are blotched all over with claret-coloured spots. They are of good form, but rather small at present, being from a weak plant. Curiously enough, in the flowers on one side of the spike the spots show a tendency to run, but not on the other, giving a different appearance to the two.

An inflorescence of the remarkable Epidendrum × Wallisio-ciliare has been sent by Messrs. James Veitch and Sons, of Chelsea. It was described at page 14 of our third volume. It seems a confirmed winter flowerer, and thus will prove very useful. The inflorescence has now four flowers.

A nearly white form of Lycaste Skinneri has been sent from the collection of W. P. Burkinshaw, Esq., of Hessle. The lower half of each petal, however, is stained with light pink, and a trace of the same appears on the base of the lip. Thus it approaches the variety armeniaca.

A box of seasonable flowers from Messrs. B. Hurst & Son, Burbage Nurseries, Hinckley, contains a very good form of Cypripedium × Rossianum, in which the characters of C. barbatum and C. tonsum are very clearly blended. The others are forms of C. insigne and C. × nitens, Lælia anceps, and the pretty little L. albida.

In the account of Cypripedium insigne and C. niveum with twin spikes, at page 353, a little slip occurred, the names being accidentally transposed. It is the former that has been grown out of doors in the summer, and the latter that has always produced twin spikes.

A fine yellow form of Cypripedium insigne has flowered at the Royal Botanic Gardens, Glasnevin, under the care of Mr. F. W. Moore, out of Messrs. Sander's 1890 importations. The spots are present, but very pale, as in C. insigne Ballianum, to which it perhaps come nearest.

We learn that Mr. R. Eichel, formerly with Messrs. Charlesworth & Co., has commenced business as a Nurseryman and Florist, at 4, Rawson Square, Bradford.

## SOPHROCATTLEYA × CALYPSO.

THIS beautiful hybrid has recently flowered both with Baron Sir H. Schröder and Sir Trevor Lawrence, and is certainly a plant of great merit, as was originally anticipated. It was raised by Messrs. James Veitch and Sons, from Sophronitis grandiflora ♀ and Cattleya Harrisoniana ♂, and was described about six years ago (Rolfe in *Gard. Chron.*, 1890, XIV., p. 588). Though most like the former in habit it shows more of the Cattleya parent in the size, shape and substance of the flowers, which sometimes reach $3\frac{3}{4}$ inches in diameter. The sepals and petals are of a brilliant rose purple shade, and the lip bright yellow with a deep purple apex, thus forming a most effective contrast. A figure is given in a recent issue of the *Gardeners' Chronicle* (1896, XX., p. 695, fig. 122).

## BOTANICAL ORCHIDS AT KEW.

NUMEROUS interesting Botanical Orchids have flowered at Kew during the autumn months, one of the most remarkable being Cynorchis Lowii, a Habenaria-like plant with purple lip, native of Madagascar; the rare Cycnoches Haagei, and Mormodes Cogniauxii, a recent addition to the genus.

In the Dendrobium group must be mentioned the rare D. Leonis, of the Aporum group, D. strongylanthum, D. bracteosum, whose flowers last for weeks in perfection, Bulbophyllum cupreum, and the remarkable Cirrhopetalum Medusæ, C. gracillimum, and C. ornatissimum. Of Masdevallias were the pretty little M. striatella, which always blooms very freely in the autumn, M. torta, and several others, while Pleurothallis was represented by P. villosa, P. sicaria, P. rubens, P. octomerioides, and the rare P. platyrhachis from Costa Rica.

Lælia virens is one of the few species in this genus which must be classed as a botanical Orchid, for its small greenish-white flowers cannot be termed showy. Eulophia Ledienii is interesting on account of its variegated leaves. Elleanthus capitatus is an Orchid seldom met with in collections. Of Maxillarias may be mentioned M. Parkeri, M. nigrescens, M. madida, and M. discolor, while Angræcum is represented by A. pellucidum, A. vesicatum, and A. distichum. A few others not generally cultivated include Liparis longipes with very graceful racemes, Epidendrum auritum, Octomeria crassifolia, Cryptophoranthus oblongifolius, with flowers only opening by a pair of windows at the sides, Polystachya Buchanani, Acampe dentata, and the pretty little Cœlia bella, which however does not exhaust the list of interesting plants in the collection.

## PHALÆNOPSIS × SCHILLERIANO-GLORIOSA.

About nine years ago Messrs. Hugh Low & Co., Upper Clapton, introduced a handsome Phalænopsis from the Sulu Archipelago, which was named Phalænopsis gloriosa, by Reichenbach (*Gard. Chron.*, 1888, III., p. 554). It has since been reduced to a variety of the Philippine P. Aphrodite, though in the long and narrow front lobe of the lip it is more like the original Malayan P. amabilis, which Lindley re-named as P. grandiflora. It, however, differs in some details, and the markings on the lip are invariably purple, without any yellow, and thus it evidently represents a local race, somewhat intermediate between the above two plants, just as its habitat is also intermediate. Among the importation a plant was noticed which had the leaves transversely barred and mottled with silver-grey, and the roots rather flattened, thus approaching P. Schilleriana. It bloomed in 1890, and showed a similar resemblance in the flowers, and thus it was concluded to be a natural hybrid between the two species, and has since been cultivated under the above name. Curiously enough, P. Schilleriana had not been observed in Sulu, but the above evidence should be conclusive that it grows there. It is most comparable with a light form of P. × leucorrhoda, but the front lobe of the lip is more angular at the sides, and there are other differences which clearly show the influence of P. gloriosa, and thus confirm Messrs. Low's statement of its origin. The influence of P. Schilleriana is seen in the leaves and roots, and in the shape of the tendrils and lobes of the lip, which are quite intermediate in character. The flowers are large and handsome, white flushed with pink at the base of the sepals and petals. The plant is now in the possession of G. F. Burton, Esq., of Bourton-on-the-Water, who is a most enthusiastic grower of Phalænopses, and is endeavouring to get together a complete collection of the genus.

R. A. R.

## DIES ORCHIDIANÆ.

In common with most other readers of the *Review*, I have been a good deal interested in that case reported under the heading, "Orchids in the Law Courts," at pages 336 and 373 of your last volume, and should think very few people regard the result as satisfactory. It is not exactly clear to my mind what the decision really amounts to. If it implies a suspicion that the plants brought into Court were not the ones actually purchased, by all means let us have the case over again, and have their identity clearly established. If, on the other hand, it implies the belief that the plants were those actually purchased, but that they afterwards reverted to ordinary forms, I can only regret that Mr. Commissioner Kerr is not the fortunate possessor of a collection of choice varieties, and then, perhaps, he would be able to tell us how often they revert back to ordinary forms. The general experience of cultivators is that such reversions rarely, if ever, take place. The peculiarities which distinguish a choice variety from an ordinary form, and which give to it an enhanced value, can be relied upon to be repeated year after year, and so well is this known that no trader of repute would have allowed a case of this kind to be brought into Court. The case is admittedly an exceptional one, and so unsatisfactory as it stands that it ought not to be allowed to rest where it is. If the plea of reversion is to be successfully set up every time some plant purchased as a choice variety turns out to be an ordinary form there is no telling what will happen, and it would be unfortunate in many respects if amateurs refused to purchase choice varieties without seeing them in flower, which seems the only alternative.

---

The flowering of another hybrid Odontoglossum of artificial origin is an event of considerable importance, as so many failures have had to be recorded with this particular genus, and yet there is no other in which so many well-authenticated natural hybrids occur. There seems to be something in our climate which is fatal to these plants in their infant stages, unless indeed we have not yet learned how to treat them properly. It would be very interesting if Mr. Cookson would let us know the history of his Odontoglossum × crispo-Hallii, and whether any special treatment has been given. It is a very handsome plant, and one that can never be expected to occur in a wild state, for the parents do not grow together. The preceding examples served to confirm the origin and parentage of two supposed natural hybrids, O × Denisoniæ and O. × excellens, and I hope in time to see the origin of others demonstrated with the same certainty. Several crosses, I know, have been made with this object in view, and it would be interesting to know with what result. The success attained by Mr. Cookson and his able

gardener, Mr. Murray, should encourage others to persevere in their experiments in this interesting field.

---

Another recent hybrid deserves special mention. I allude to Calanthe × albata, recently exhibted by Messrs. F. Sander & Co., which at last successfully combines the evergreen and deciduous sections of the genus. Many attempts have previously been made, and now that the gap has once been bridged over I expect to see greater variety introduced into the charming group of hybrids which has originated by the intercrossing of Calanthe vestita and its allies. Repeated failures had led to the belief that such experiments were useless, as the two refused to combine, just as in the case of the temperate and tropical species of Cypripedium—I beg pardon, I mean Cypripedium and Paphiopedium.

---

And this brings me to the important paper on the Cypripedium group by Mr. Rolfe in the last two issues of the *Review*, and their bearing on the nomenclature question. The genera of Orchids are notoriously difficult to deal with, and these new genera seem to be better defined than are some of the old ones, which everybody admits. Are they then to be adopted? The case of Selenipedium serves to afford some sort of guide as to the proper course to follow. It might be said that until recently this name was hardly recognised in gardens, and now it appears that it must be given up again in favour of something else. But on the other hand it is clear that its author is largely to blame for its want of recognition. To repeat a remark made nearly two years ago in these pages (*supra*, III., p. 75):—"Had Reichenbach had the courage of his opinions when separating Selenipedium as a distinct genus, in 1854, the inconvenience of the change would scarcely have been felt, so few were the species then in cultivation, but he adopted a sort of double-barrelled nomenclature, giving one name for science and another for gardens—a system whose absurdity must be apparent to everyone who will reflect for a moment." I don't know that I can improve on that, and so the case of the Selenipedium must be held up as an awful warning, in more senses than one.

---

The alteration of names well known in gardens is an undoubted nuisance, but it is sometimes necessary as new discoveries are made, and the present instance seems to be one of them. How soon the new names will become current in gardens depends to a great extent how soon we become familiar with them. Already Paphiopedium has been introduced into Count Kerchove's *Le Livre des Orchidees* and Stein's *Handbuch*, and others will probably follow suit, so that in time I suppose we shall become familiar with them. But I hope those who make the transfers to the new genera

will be careful not to reproduce a host of unnecessary names which are now current. If these could be consigned to the limbo of obscurity, whence they ought never to have emerged, the change would not have been made in vain. Half-a-dozen names for one and the same thing, as in the case of the hybrids between Paphiopedium barbatum and P. bellatulum, is a quite unnecessary luxury, as distinct variations can easily be distinguished by the addition of a varietal name, if the specific name be formed according to the rules laid down, though not always followed.

---

I am glad to see another protest against this unnecessary multiplicity of names in your last issue (page 360), and think the proposal that the Orchid Committee should go round and cancel all unnecessary names before the reporters go round a decidedly good one. I believe they already do something in this direction, and they certainly might go a little further with advantage. I have two letters just to hand warmly commending the proposal, and in the hopes of seeing it carried out I propose that the writers be added to the Committee forthwith.

---

I cannot conclude my present budget without alluding to the illustration of the magnificent specimen of Vanda Sanderiana given as a frontispiece to the last volume. A permanent record of such a specimen is invaluable, and a more life-life presentment it would be impossible to give. I hope to see many more such in the *Review*.

ARGUS.

## OBITUARY.

ANOTHER of the older generation of Orchidists has passed away, in the person of Mr. Robert Warner, who died at Widford Lodge, Chelmsford, on December 17th, in his eighty-second year. For many years he was an enthusiastic grower of Orchids, the beautiful Cattleya Mossiæ being one of his special favourites, and it is recorded that as many as six hundred blooms have been expanded at one time in his collection. A series of the best of these varieties was described in the *Gardeners' Chronicle*, for 1864. In 1869 he took a fine collection of over fifty Orchids, all large specimens, to the great International Horticultural Exhibition at St. Petersburg, and although eight days were occupied by the journey, they arrived in excellent condition. His three volumes of *Select Orchidaceous Plants* are well-known and highly esteemed, and his name appears on each volume of the *Orchid Album* from the commencement. His name will be perpetuated in the beautiful Cattleya Warneri, which flowered for the first time in his collection in 1860.

## "THE ORCHID REVIEW."

By REGINALD YOUNG, Liverpool.

THE completion of the fourth volume of the *Orchid Review*, and the advent of the Jubilee number (February, 1897), seems a not inappropriate time to call attention to what has already been accomplished in a work which every Orchidist should be interested in, and whose appearance is anticipated with pleasure month by month. One of the chief attractions of the *Review* to the writer is, that it is devoted exclusively to Orchidology, and makes up each year into such a handy volume, either for re-perusal or future reference, the latter being facilitated by an excellent Index, the preparation of which must entail a great amount of labour.

"The History of Orchid Hybridisation," which began with the first number, and continued monthly throughout the first volume, was undoubtedly the most important feature of the *Review* in 1893. It supplied a distinct want, and must have been a boon to the hybridist, not only at the time of publication, but to those who have since commenced the pursuit of such a delightful study. Other most interesting articles were those on "Hybrid Odontoglossums," "Hybrid Oncidiums," "Lælio-cattleya × elegans and L.-c. × Schilleriana," and "Notes on Orchids in the Jungle," but it would take far too much space to enumerate even a small proportion of the good things provided for readers of the *Review*. Besides all this, there have been descriptions of new Orchids, species and hybrids, reports of meetings and exhibitions, more particularly those of the Orchid Committee held at the Drill Hall, Westminster, and a monthly Calendar of Operations on the general culture of Orchids; altogether forming a record of what is being done in the culture of Orchids which will be increasingly valuable as time goes on.

In the second volume, perhaps, the "History of Orchid Cultivation" (which I hope to see continued) and "Orchid Hybridisation" were the papers most worthy of attention, though the monthly "Dies Orchidianæ" was always looked forward to and eagerly welcomed by me.

"Hybrid Selenipediums" in the third volume is unique in construction, and very valuable for reference, while such articles as "Cypripedium insigne and its varieties," "Mexican Hybrid Lælias," "Cattleya Trianæ and its varieties," "Notes on certain varieties of Dendrobium nobile," "Cattleya—What constitutes a Species?" "Miltonia spectabilis and its varieties," and others, are all full of interest.

There is no falling off in the contents of Volume IV., indeed "The Cypripedium Group" is as important a paper as any that has preceded it, while again we have such useful information as is contained in the articles, "Lælia anceps and its varieties" and "Cattleya Hardyana and its varieties."

The illustrations can be relied on for their accuracy, a feature which will be fully appreciated by those who have seen some of the highly exaggerated pictures sometimes portrayed in Orchid works.

Such a record of the past is, I think, sufficient guarantee that future numbers will be as ably conducted as heretofore, and I would urge all admirers of the *Review* to seek fresh subscribers among their friends, and so encourage the Editor to continue his arduous labours. I believe I only echo the sentiments of many readers in these remarks, and think they should find expression in some form or other. I think Orchid growers might utilise its pages more than they do in discussing matters of interest, as the work is such a useful medium for the interchange of ideas.

## A NEW YEAR'S GREETING.

By EDWARD H. WOODALL, Scarborough.

A NEW year's greeting, and the thanks of the steadily increasing number of Orchid growers who profit by the experience gained from the columns of the *Orchid Review*, are due, I think, to its Editor, who is helpful to discriminate, authoritative in judgment, and knows how to moderate both the admiration and the ignorance of beginners in this noble art.

How disappointing are the exaggerations we occasionally meet with which seem as if meant to entrap the unwary! How annoying it is to find a flower, described as "so many inches across," to turn out only a tithe of what one has been led to expect; and how sad it is to find glowing crimson but dull browns, and the rich colouring or spotless tone of some petal or sepal to exist but in the eye of the describer! The *Orchid Review* that has and does protest against these blots should be supported in such wholesome warnings.

We have it on excellent authority, old as the days of the Roman Empire, that our eyes are more trustworthy than our ears; nowadays I fear all that greets our eyes in print is not necessarily to be believed, and when applied to a plant it still holds good; so I would translate it into modern parlance, "Don't buy a plant from description, but see it in bloom first!"

We can't all of us attend the fine shows where the treasures of the Orchid world are set at our feet, regardless of expense or difficulty of culture, so we turn gladly to the pages of the *Orchid Review*, where we know we shall find an honest and yet appreciative account of what is best, what we should aim at, and what we shall be wise to avoid.

## THE HYBRIDIST.

### Odontoglossum × crispo-Hallii.

It is with much pleasure that we are able to record the flowering of another artificially raised Odontoglossum. It is a seedling between O. Hallii ♀ and O. crispum Cooksoni ♂, raised in the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, by Mr. Murray. It was exhibited at the Royal Horticultural Society's meeting on November 24th last, and received a First-class Certificate. It is quite intermediate between the two parents in general character. In shape it is comparable with O. Hallii, with rather broader segments; and the colour yellowish white, deeper yellow on the lip, with numerous dark crimson-brown blotches and spots. The crest is most like that of O. Hallii, but the lip is less fimbriate than in that species. Thus it will appear that there is the same unmistakable combination of the characters of the parent species as is seen in the numerous natural hybrids which have appeared in this genus, but it is of course not comparable with any of them, as the two parents do not grow together in a wild state. The plant at present is weak, having two bulbs and a three-flowered raceme, but when it reaches maturity it will be of great beauty. It is the second hybrid artificially raised from O. crispum, the earlier one being the form of O. × Denisoniæ (Wilckeanum) known as O. × Leroyanum, of which an account has already been given (*supra*, I., pp. 204-205, 291-292). Indeed, the present hybrid resembles a form of O. × Denisoniæ more nearly than any other, as might be expected from the general resemblance between O. Hallii and O. luteopurpureum.

### Calanthe × albata.

This is a most interesting hybrid, raised in the establishment of Messrs. F. Sander & Co., St. Albans, between Calanthe veratrifolia ♀ and C. × Cooksoni ♂—the latter belonging to the C. vestita group, and we believe a white form of C. × Veitchii. Various unsuccessful attempts had previously been made to cross the evergreen and deciduous sections together, and Messrs. Veitch in 1890 remarked (*Man. Orch.*, VI., p. 61):—"While the species of the Vestitæ group cross freely with each other, and with the mules resulting from such crosses, and while, so far as the experiments have been carried, the cultivated species of the Veratrifoliæ will also cross with each other, no species or mule belonging to one of the sections can be induced to cross with any species or mule of the other." Mr. Maynard also informs us that he had frequently made similar experiments without any result, so that the present success is the more noteworthy. The plant was exhibited at the Royal Horticultural Society's meeting on November 10th last, and attracted a good deal of attention, though it had evidently not yet reached its full development. In the

vegetative organs it most resembles the seed parent, but the inflorescence is somewhat arching and softly pubescent, as in the pollen parent, though the hairs are much shorter. The flowers also much resemble those of the latter, though a little reduced in size; the colour white, with three deep yellow crenulate parallel keels at the base of the lip. The bracts are persistent, and fairly intermediate between those of the two parents.

## AN AMATEUR'S NOTES.

My notes have been in abeyance for the last two months, though not for lack of material, for several of the kinds mentioned in my last have continued in bloom almost up to the present, while various others have put in an appearance, particularly the fine old Cypripedium insigne, which is now a host in itself, and this, together with some of its hybrids, are invaluable for cutting at Christmas. C. × Leeanum, C. × Arthurianum, and C. Niobe are all very charming, and when the crosses with the new C. Charlesworthii begin to flower there will probably be a great addition to the list.

Cattleya maxima has flowered well, and is a very useful autumn-bloomer, and this, together with C. Bowringiana and the fine old C. labiata, has made a fine display. C. bicolor has also put in an appearance. Lælias autumnalis and anceps have been good, also L. × Eyermaniana and L. pumila, while the brilliant little Sophronitis grandiflora is as handsome as usual at this season.

Oncidium crispum, Forbesii, and others have been very brilliant, and the fine old Zygopetalum intermedium, with its large and highly fragrant flowers, is quite indispensable at this season. It is one of the easiest possible Orchids to grow. Miltonia candida has also been very effective, while some of the Odontoglossums are beginning to flower. Calanthes have made a brilliant show, and are indispensable at this season, though they are susceptible to fog, a few hours of which will effectually clear the house for the time being.

In the Warm house must be mentioned Phalænopsis amabilis, P. Aphrodite, and P. gloriosa as very effective, also the fine old Angræcum sesquipedale, A. Humblottii, and A. superbum. Cycnoches chlorochilon has also yielded quite a number of its remarkable flowers, and it is hardly necessary to add that Dendrobium Phalænopsis has kept on flowering right up to the present.

Various well-known things are now showing for flower, and with the gradually lengthening days of the new year, and the increasing light, there will be a great accession to the number of showy Orchids in flower.

AMATEUR.

# ORCHIDS ABROAD AND AT HOME.

Notes of a Lecture delivered before the members of the Kew Gardeners' Mutual Improvement Society on December 7th, 1896, by Mr. R. A. Rolfe.

THE Natural Order Orchideæ is the largest among Monocotyledons, at least five thousand species being now known. It is also very widely diffused over the globe, being represented in nearly all climates but the coldest and driest. They are most abundant in tropical America, especially in the mountains, and in the great Indian region. The *Flora of British India* includes 1300 species, and an equal area in some parts of tropical America would produce still more. They are rarer in continental Africa, where from six to seven hundred species are found within the tropics. As many as twenty-two species extend within the Arctic circle, but thirteen of these only reach so far north in Europe where the ameliorating effect of the Gulf Stream is felt. The terrestrial species are found over the whole area of the Order, and in temperate regions are very numerous in Europe, Australia, and South Africa. Within the tropics they abound in various localities. The epiphytic species are for the most part found within the tropics, and their distribution has already been briefly outlined. As regards habitat, they occur under almost as varied conditions as flowering plants generally, with this exception, that none are truly aquatic, though many grow in bogs and swamps, and that very few indeed are true parasites.

A considerable number of species are very handsome, for which reason they are very largely cultivated as decorative plants, and these occur in a wild state under very varied conditions. Many others, though less showy, are still well represented in gardens, and the recently issued *Hand-list* of the Kew collection includes about 1800 species. Most of the generally cultivated species are grown without much difficulty under the approved methods of culture, and a few are grown successfully for almost indefinite periods. But many others gradually deteriorate, and the stock has to be renewed periodically from new importations, while others never seem to establish themselves, but flower freely from imported plants, and then soon dwindle away. These are called intractable subjects, and bring me to the special point of my lecture.

It must be obvious to everyone that these intractable subjects succeed perfectly well in a state of nature, otherwise they would some become extinct, and the reason of their being intractable at home is that they are not properly treated—the conditions under which they grow naturally are not imitated sufficiently under our systems of artificial culture. There is something wanting, and the question is what that something is, and how it may be supplied. Now it should be obvious to everyone that a knowledge

of the essential conditions under which any plant exists in a wild state would enable the cultivator to grow it with success, provided always that it were possible to imitate them. Against this view it has been argued that a knowledge of natural conditions is of little value to the cultivator; that plants in nature, owing to the severe struggle for existence which is continually going on, don't grow where they like, but where they can; and that the problem which the cultivator has to solve is how to grow his plants under a totally new and different set of conditions. In this view I cannot help thinking that one or two essential points have been overlooked.

In the first place, whenever a plant is found growing and thriving in a wild state it is certain that it exists under conditions which suit it, otherwise it would speedily be pushed out by a host of competitors, and if those conditions were imitated after the plant were brought into cultivation it would continue to thrive. The cultivator protects his plants from the fierce struggle for existence, which is a very real and substantial benefit, and if they then fail to thrive something is wrong. They may keep alive in a weak and spindly condition, because of the protection from a host of enemies, which in a wild state would mercifully terminate their existence; and thus plants in a wild state may be said to be in harmony with their environment.

I do not for one moment contend that every condition under which a plant grows in a wild state must be imitated artificially in order to cultivate it successfully, for many plants grow under such varied conditions that is at first difficult to see what they can possibly have in common. This may indicate great plasticity of constitution, and a power to adapt themselves to widely different circumstances. Such plants seldom trouble the cultivator much, and I don't propose to offer him any advice as to how he should treat them. It may also mean that many of the apparently natural conditions are purely accidental, and therefore non-essential, and this immediately suggests the necessity of distinguishing between essential and non-essential conditions. I was once asked, "What do you call essential conditions, and how may they be recognised?" and the answer is not so difficult as might be supposed.

We will suppose that some handsome Orchid proves intractable under cultivation, and a collector, who goes in search of more plants, determines to note the conditions under which it grows naturally, with a view to overcoming the difficulty. The desired information would be collected under the heads—(1) Climate, including the average daily, and yearly range of temperature, the amount of rainfall and its distribution throughout the year, the period of wet and dry seasons, and the altitude at which it grows; (2) Habitat, including its position with respect to light and shade, and the nature of the medium on which it grows; and (3) Food supply, which

largely depends upon the preceding conditions. He would soon observe a certain amount of variation in these conditions, and might specially note those under which the plant grew with the greatest amount of vigour, particularly with regard to habitat, and, in the case of a mountain species, altitude. In this way he would soon discover what circumstances were purely accidental and what essential to the plant's existence. The latter information could not fail to be of great utility to the cultivator at home, and if these conditions were (or could be) imitated the plant could not fail to succeed. Non-success would only indicate that some important factor had been overlooked or omitted. Viewed in this light it may safely be affirmed that a knowledge of the circumstances under which any given plant exists in a wild state is the surest guide to success in cultivating it.

All cultivators adopt some kind of rough classification with respect to the treatment required by any new Orchid of which they know nothing, but in this they are drawing upon past experience, and should they succeed at the first attempt it does not in any way disprove the argument as to the utility of a knowledge of natural conditions to the cultivator. The fact is, an experienced cultivator can form some idea of the requirements of a new plant by simply examining it. The presence of pseudobulbs, tubers, or of thick succulent leaves, tells of a period of repose, for are not such organs store-houses of nutriment to enable the plant to tide over some period when the vegetative forces are dormant? Deciduous leaves have also a like significance. The texture of the leaves afford an indication of a plant's requirements with respect to light and shade; and the position of the roots aerial or terrestrial—gives an idea as to the position in which it grows. But examination of a plant affords little clue to a plant's requirements with respect to temperature. I am not aware that a comparison of Goodyera repens with some tropical species would lead any cultivator to infer that the former was quite hardy unless he knew it to European, and, in fact, a native of Great Britain. It is true he may recognise a new plant as a Dendrobium, an Oncidium, or what not, but this is not by any means an infallible guide, for different members of the same genus often grow naturally under quite different conditions, and will not succeed under identical treatment. Take Oncidium. Here we find some species inhabiting the tropical lowlands, some of which thrive for almost indefinite periods in an ordinary stove, as, for instance, O. sphacelatum, and others which grow high up in the Andes with Odontoglossums, and which will no more grow in a stove than will the latter.

Dendrobium nobile likes any amount of heat and moisture when growing, but in order to flower it well it must be subjected to a long cool rest after the pseudobulbs are completed; in fact, it rapidly deteriorates if kept under a hot exciting temperature throughout the year. I once found

a New Guinea Dendrobium in a collection resting in a Cold house with D. nobile (the two had grown well together), and pointed out to the gardener how unlikely it was that it would stand such treatment, and advised him to take it to a warmer house to rest, which he immediately did. I learned afterwards that the plant never recovered: the strain had been too great, and it failed to start in the spring, as I had feared. These are only examples which show how easy it is to jump at a wrong conclusion, and they might be multiplied indefinitely. Even the species of such a genus as Cattleya or Masdevallia cannot all be treated exactly alike, as every gardener knows.

The case may be put another way. Species of certain genera which are supposed to require different treatment actually grow together in a wild state. Thus Oncidiums are found growing with Odontoglossums in one locality, and with Cattleyas in another, but the species are quite different in the two cases, and the attempt to grow them together will inevitably end in disaster. The cultivator might ultimately discover the correct treatment, but too often while he is experimenting the plant dies, and even if success is ultimately attained by this empirical method, how much more quickly and certainly he would have gone to work had he known something of the natural conditions under which it grows in a wild state. How many failures attended the early cultivation of Odontoglossums because cultivators were ignorant of the fact that they grew high up on the mountains in a temperate climate, although within the tropics. Bateman, in 1864, remarked that from the days of Humboldt and Lexarza species pre-eminent in loveliness had mocked the utmost efforts of our most skilful growers; they had invariably succumbed in the stifling atmosphere to which they were remorselessly consigned. Here and there an accidental success was achieved in a greenhouse, but the hint was turned to no account. Notwithstanding the repeated warnings of Mr. Skinner, Warscewicz, and others for thirty years we persisted in the incredible folly of growing Cool Orchids in hot stoves. At length, however, one or two growers adopted a rational method of treatment, and with what success we all know. Looking back a little further, we find Lindley, in 1859, remarking that plants which in 1820 were thought to be uncultivatable had been brought as much under command as heaths and ferns. And this is the past history of Orchid culture in its broad features. A knowledge of the conditions under which these plants grow has been gradually acquired, and their treatment has been framed accordingly. Of course, the essential conditions have sometimes been discovered by experiment, and even stumbled upon by accident, though this does not affect the argument.

*(To be continued.)*

## PAPHIOPEDIUM CHARLESWORTHII AND P. SPICERIANUM.

THE accompanying illustration, which is reproduced from an excellent photograph sent by Dr. A. W. Holsholt, of Stockton, California, serves to show the difference between Paphiopedium Charlesworthii and its nearest ally, P. Spiceranium, and also a peculiarity of the former, to which allusion was made at page 354 of our last volume, namely, the lower sepal being broad and coloured like the dorsal one. On the opposite page, for convenience of comparison, is given a figure of the

FIG. 1. PAPHIOPEDIUM SPICERIANUM. FIG. 2. P. CHARLESWORTHII.

remarkable plant, provisionally named "Cypripedium Fred. Hardy," whose origin is somewhat doubtful; whether it is an albino of the latter or a natural hybrid between it and some other species being uncertain. The different plants will be noted in the order of their introduction.

PAPHIOPEDIUM SPICERIANUM, or Cypripedium Spicerianum, to cite its better known name (Fig. 1), first flowered in Europe in the autumn of 1879,

in the collection of Mr. Herbert Spicer, of The Woodlands, near Godalming, but nothing was known of its origin except that it came in a mixed collection of Orchids from India. Part of the plants were disposed of to Messrs. James Veitch and Sons, of Chelsea, and in the following year it was described. Soon afterwards it was discovered in Assam by the collectors of Messrs. Hugh Low and Co., and Messrs. Sander, and it soon became well known in collections. On account of its good qualities, and particularly its pure white dorsal sepal, it was quickly taken in hand by hybridists, and now it has been crossed with over twenty distinct species, besides numerous hybrids, and among its offspring may be numbered such sterling plants as P. × Leeanum, P × Niobe, P × Buchanianum, and others. The species is too well known to require description, but besides the reflexed character of the dorsal sepal, we may allude to the undulate petals, and the folds of the purple staminode, all of

Fig. 3. CYPRIPEDIUM FRED. HARDY.

which are well shown in the two uppermost flowers in our figure. The leaves and dwarf habit are also shown.

PAPHIOPEDIUM CHARLESWORTHII, or Cypripedium Charlesworthii (Fig. 2), needs no description here, as the original coloured plate and description appeared in these pages (I., pp. 303, 355, with *Frontispiece*), and also the history of its discovery (III., p. 170). The two lower flowers in our illustration represent this species, the left-hand one being the normal form. The marked difference in the flat-veined petals and the shape and markings of the dorsal sepal are well shown. The ivory-white broadly obovate staminode with its yellow-horn are better shown in a second photograph from Dr. Hoisholt, showing the plant in another position.

The right-hand flower shows the lower sepal abnormal, being much broader than usual, and almost like the dorsal one in colour, though the white is a little more predominating, as recorded at page 354 of our last issue. The two flowers shown are from different plants, two small pieces having been potted up together, but the abnormal one is showing a second bud, which may prove similar in character.

We have received a somewhat similar flower from the collection of Capt. R. Twiss, Birdhill House, Limerick, and of which the sender remarks that the plant has four flowers, and last year it had two, all being alike in having broader coloured lower sepals, which are evidently doing their best to follow suit with their dorsal relation. It represents a small dark form of the species.

CYPRIPEDIUM FRED. HARDY (Fig. 3) is a provisional name given to a very curious plant which flowered in the collection of F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey, and received an Award of Merit from the Royal Horticultural Society on November 14th last, as recorded on p. 374 of our last issue. We then suspected it to be an albino of the preceding species on account of the general similarity and the identical staminode, but this point seems somewhat uncertain at present. It will be seen that the petals are relatively longer and narrower, and the shape of the dorsal sepal somewhat different. Mr. Stafford, Mr. Hardy's gardener, states that it was sent home by Mr. R. Moore, the discoverer of Paphiopedium Charlesworthii, to his brother, Mr. J. W. Moore, of Bradford, as a new species, together with the preceding. A small bit of what appears to be something else was intermixed with it, which looks like a seedling, and has a rounded leaf very slightly mottled. This is being watched with much interest, but is not likely to flower for about three years. It has been suggested that the present plant is a natural hybrid, though the necessary evidence is not yet forthcoming. The photograph here reproduced was kindly sent by Mr. Hardy, and, although small, shows well the general character of the plant. Compared with ordinary P. Charlesworthii, it may be noted that the leaves have no purple markings beneath, the scapes are light green, the petals and lip light greenish yellow without markings, and the dorsal sepal is white with a little purple stain at the base, and these characters would be expected in an albino, but the cause of difference in the shape of the petals and dorsal sepal above pointed out is not yet explained, and the question of the correct name must be left for the present. In any case, it is a beautiful addition to the group, and its appearance is very interesting. It has now been divided, and it is intended to grow one plant in the Warm and the other in the Cool house, to see in which it succeeds best.

## ANGRÆCUM EBURNEUM AND ITS ALLIES.

THE species of this group are fine old garden plants which flower at this season of the year, and as they afford another curious example of the confusion in the history of apparently well-known species, the following notes will be useful.

Angræcum eburneum is the original species of the genus, and was figured and described in 1804 by Bory, who met with it in the Island of Bourbon, and named it in allusion to its ivory white lip. In 1832 Lindley figured what he thought was the same plant in the *Botanical Register*, and after speaking of it as not uncommon in Bourbon, remarked, "It was also met with at St. Mary's, Madagascar, by the unfortunate Forbes, by whom the only plant known to exist in Europe was sent to the Horticultural Society. From that plant the accompanying drawing was made in November last, when it flowered for the first time, continuing in beauty for nearly two months." This plant was not the true A. eburneum at all, but the allied species A. superbum, Thouars, as was pointed out by Reichenbach, yet the blunder continues to be repeated down to the present day.

In 1847 Lindley described a plant under the name of A. virens, which flowered with Messrs. Loddiges, of Hackney, remarking, "This is very like a small state of Angræcum eburneum, but Mr. Loddiges regards it as distinct; and in the flatness of the median ridge of the lip, and in the smaller size of all the parts, it seems to be distinguishable." It was said to have come from Serampore, but Lindley suggested that it might have come from the old Botanic Gardens there. It is, however, probable that the record arose through some blunder. A few years later, in Paxton's *Flower Garden*, he added, "In the Garden of Plants at Paris were growing in June last two or three specimens of this remarkable plant, of which we had previously seen fragments only from the late Mr. George Loddiges." These had been received from Bourbon, and were in reality the true A. eburneum, which Lindley, however, failed to recognise.

In 1854 a third species was described, in *Pescatorea*, under the name of A. Brongniartianum, Rchb. f., when the confusion respecting the two earlier species was pointed out. This plant flowered in the collection of M. Pescatore at Paris, and is said to have previously come from the collection of Madame Quesnel, of Havre. This has since been erroneously referred to A. eburneum as a synonym.

There is a fourth species which has also been confused with A. eburneum, namely, A. Giryamæ, Rendle, and though believed not yet to be in cultivation, it is here included for the sake of completeness.

The subsequent confusion in the nomenclature of these species may be

seen in the revised synonymy given below, where also the differences between them and other details are pointed out, and this will enable those who possess plants to label them correctly.

1. A. EBURNEUM, *Bory Voy. Iles Afr.*, I. (1804), 359, t. 19 : *Thouars Orch. Iles Afr.*, t. 65 : *A. Rich. Orch. Iles Fr. et Bourb.*, p. 71 : *Lindl. Gen. and Sp. Orch.*, p. 245, in part ; Rchb. f. in *Walp. Ann.*, VI., p. 904 ; S. Moore in *Baker Fl. Maurit.*, p. 356, in part.

Limodorum eburneum, *Willd. Sp. Pl.*, IV. (1805), p. 125.

Angrœcum virens, *Lindl. Bot. Reg.*, XXXIII. (1847), sub. t. 19 ; *Paxt. Fl. Gard.*, I., pp. 25, 26, fig. 9, 10 ; Rchb. f. in *Walp. Ann.*, I., p. 792 ; *Orchidophile* (1884), pp. 72, 73, with fig.

A. eburneum var. virens, *Hook. Bot. Mag.*, LXXXV. (1860), t. 5170 ; Veitch Man. Orch., VII., p. 126 ; Will. Orch. Gr. Man., ed. 7, p. 98.

The original species, and only known from the island of Bourbon. It has much smaller flowers than the others, the segments being about 1¼ to 1½ inches long, the lip ovate and shortly acuminate, and the spur about 2½ to 2¾ inches long.

2. A. SUPERBUM, *Thouars Orch. Iles Afr.* (1822), tt. 62-64 ; *Lindl. Gen. and Sp. Orch.*, p. 245 ; Rchb. f. in *Walp. Ann.*, VI., p. 904 ; *Ellis Three Visits to Madag.*, p. 172, with fig. ; *Ill. Hort.*, VIII., *Misc.*, p. 77, with fig. ; *Orchidophile* (1885), p. 168, with plate ; *Will. Orch. Gr. Man.*, ed. 7, p. 97. with plate.

A. eburneum var. superbum, *Gard. Chron.*, 1873, pp. 216, 217, fig. 46 ; *Lindenia*, V., p. 91, t. 236.

Aërobion superbum, *Spreng. Syst. Veg.*, III. (1826), p. 718.

A. eburneum, *Lindl. Bot. Reg.*, XVIII. (1832), t. 1522 (not of Bory) : *Bot. Mag.*, t. 4761 ; *Batem. Sec. Cent. Orch.*, t. 111 ; *Orch. Alb.*, I., t. 41 ; *Veitch Man. Orch.*, VII., p. 126, in part ; *Will. Orch. Gr. Man.*, ed. 7, p. 97, in part.

Only known from Madagascar, where it occurs in various localities, and is noted as most abundant between Tamatave and Antananarivo. The flowers are much larger than in the preceding, the lip as broad or broader than long, the segments 1½ to 1¾ inches long, and the spur 2½ to 3¼ inches long, and rather stout.

3. A. BRONGNIARTIANUM, Rchb. f. in *Pescatorea* (1854), t. 16 ; Rchb. f. in *Walp. Ann.*, VI., p. 904.

A. eburneum, S. Moore in *Baker Fl. Maurit.*, VI. (1877), p. 356, in part (not of Bory).

A native of Johanna Islands and others of the Comoro group, also of the Seychelles, where it seems to be pretty common. The flowers are rather large, the sepals and petals being 1¾ to 2¼ inches long, the lip broadly

ovate-orbicular, and the spur $3\frac{1}{2}$ to $5\frac{1}{2}$ inches long, the latter character readily serving to distinguish it from the others. Another character pointed out by Sir John Kirk is that the spur is folded in the bud, not straight, as in the following species.

4. A. GIRYAMÆ, Rendle in *Journ. Linn. Soc.*, XXX. (1895), p. 388.

A. eburneum, Rchb. f. ex. S. Moore in *Journ. of Bot.*, 1878, p. 137 (not of Bory); *Trans. Linn. Soc.*, ser. 2, Bot., II., p. 349.

A Continental African species found in the Nyika and Kilimanjaro districts, the Island of Zanzibar, and in the Giryamæ and Shimba Hills, but not yet introduced to cultivation. It most resembles A. superbum in general character, but has smaller flowers, the sepals and petals 1 to $1\frac{1}{4}$ inches long, the lip broadly ovate-orbicular and shortly apiculate, and the spur $1\frac{3}{4}$ to $2\frac{1}{4}$ inches long.

There are various other minor differences which will be obvious to everyone who can compare the species together in the living state, but those above pointed out are very marked. It will also be observed that each occupies a distinct geographical area, as is so frequently the case with nearly allied Orchids, and indeed many other plants.

These species are much larger than most others of the genus, and take up a good deal of room; they are, however, very stately objects when in flower during the winter months, and deserve to be represented wherever a house is devoted to East Indian Orchids.

R. A. ROLFE.

## VANDA SANDERIANA.

WITH reference to the introduction of this plant, as given at page 358 of your last issue, I think the second lot of plants was sent home by the late R. Curnow, when collecting for Messrs. Hugh Low & Co., within two months after the first lot were sent by Röbelin to Messrs. Sander, of which, if my memory serves me right, only two plants were received alive. Curnow came home, bringing the best lot ever received in this country. From this importation came the plant flowered for the first time by Mr. Lee, within about six weeks after it was imported. The second best plant went to Stevens' Rooms, and was bought by Messrs. Backhouse for 200 guineas. Twelve months later it flowered in the York Nurseries with eleven spikes. Afterwards it was bought by Messrs. Veitch and sold to Mrs. Morgan, of New York.

G. I'ANSON.

Upper Clapton.

# CALENDAR OF OPERATIONS FOR JANUARY.

By W. H. YOUNG, Clare Lawn, East Sheen.

WITH the new year commences another cycle of hopes and aspirations for the more or less ardent Orchid cultivator, and as without hope one would make little or no progress, without effort our hopes and anticipations would generally be doomed to disappointment, hence the necessity of knowing how and when to make an effort and direct our abilities into the right channel. It is with this object in view that these monthly Calendars of Operations are penned, that those having less experience in the practice of Orchid growing may glean a few ideas from those more fortunate: at the same time it enables us to record our experiences, so that even those who may have had a greater and longer experience in Orchid cultivation may find a wrinkle or two to add to their already extended stock of information. I think it is a well-known principle that, in order to teach others, the tutor should assume that his scholars know absolutely nothing of the subject before he takes them in hand. I will not assume quite so much as that, but will take it for granted that we all know something of our subject, and thus dispense with otherwise necessary explanations of terms used in our profession. To more thoroughly understand each other, it will be better to describe the different departments in a general collection of Orchids, so that in future issues we shall be understood when referring to them under their proper headings, and also that anyone having the slightest pretension to be called an Orchid amateur may know what he can grow with the accommodation at his disposal.

The season suggests that we should first speak of the Cool Orchid department, in which are grown such well-known kinds as Odontoglossum crispum, O. Pescatorei, O. Rossii, Disas, Masdevallias, and numerous others. The house or structures for these should be so built that an abundance of air can be admitted both top and bottom, and also with tanks of large holding capacity for storing rain-water. These are usually placed under the stages exposed to the atmosphere, but I think this plan is beginning to be recognised as faulty, as a body of water, when exposed, absorbs moisture instead of generating it, as was supposed in the first place. The tanks may be there, but I would suggest that they be covered, excepting in one or two places, for the purpose of dipping the water out. The temperature of the Cool department should range from 50° to 60°, taking the former for the central figure during the winter months, say from the end of October to the beginning of April, when during most of this time fire heat will be a necessity. For the remainder of the year the latter figure will be more the central point, and all our efforts should tend to keep the temperature below or somewhere near that point, by judicious damping, airing,

and shading; and oftentimes, by these means, in the hottest weather, the inside temperature can be kept considerably below that of the outside.

Taking the other extreme, namely, the East Indian department, it is not so much a difficulty of keeping it cool, but warm, and here fire-heat plays a part almost the whole year through. The temperature now should be:—Night 60°, or a trifle above, according to outside conditions; and day 65°, and more if induced by sunlight.

Between these two extremes we have the Cattleya house and Intermediate house. The first describes itself by its name, and is so called because most species of Cattleya from the alpine regions of equatorial South America thrive under the existing conditions of this house; those requiring a degree or so more warmth, or *vice versa*, can be generally accommodated at the warmest or coolest end, as required. The temperature should now be 60°, a few degrees more during the day, and a few less at night, that is with fire-heat.

An Intermediate house is one having a temperature intermediate between the Cattleya house and the Cool one, and is better suited to the requirements of the grower when split up into two or more divisions, where varying degrees of warmth and moisture may prevail suitable to the inhabitants.

In some establishments there is what is called a Mexican house, chiefly devoted to the Mexican Lælias and others, such as L. anceps, L. autumnalis, L. majalis, &c., and no doubt it is a very wise plan to have such an one, as these plants are great lovers of sunlight, but where a separate house is not provided they can generally be found a place by themselves in the Cattleya house.

Having enumerated the different houses, we will now take a glance through them, noting what is in bloom, and the condition and treatment required by the general occupants. Starting again with the Cool Orchids, we first note that Odontoglossum crispum, Pescatorei, constrictum, Sanderianum, and others of this section have various members of their respective species in bloom, and others making new growths. These latter will require to be kept more moist at the root than those in bloom, or nearly so, but providing the proper amount of moisture be present in the air, none of the plants should be given water enough to keep the compost in a saturated condition. In flower overhead are hanging plants of O. Rossii and O. Cervantesii. These too, although appreciating moisture, should not be dipped immediately the material shows signs of becoming dry. Also in this house are plants of Epidendrum vitellinum, than which there is no more brilliant coloured Orchid when in bloom. The plants are now at rest, and should only have water given them at long intervals, otherwise the leaves will turn yellow and fall off. Less harm will result from keeping

them over dry now than over wet. Ada aurantiaca, though of a different character, produces flowers of a similar hue; the plants are now in full growth, and consequently should be kept well moistened at the root. Oncidiums are also represented here, such as O. varicosum Rogersii, now at rest, and hence should be kept on the dry side; O. Marshallianum, just commencing to grow, and thus requiring more water, though, as a rule, this plant produces more roots when kept slightly on the dry side at this season; O. incurvum, which succeeds when given the same treatment as Odontoglossums; O. olivaceum Lawrenceanum, now pushing up its spikes from the partially made growths; over-watering, however, must be guarded against with this plant, or the spikes may damp off.

Masdevallias, which, I am sorry to say, are not very popular just now, should have a few degrees more warmth at this season than that quoted for the above. This may be done by placing them at the warmest end, or in a compartment by themselves. They should all be kept, more or less, on the dry side, in opposition to the generally accepted idea that they should be well supplied with water because they have no pseudobulbs. Harm is often done to these plants by over-watering to keep the sphagnum moss alive, the old saying being that if the moss is in a nice healthy and green condition the plant will be ditto; but that is not my opinion. The best of the genus in flower now is M. tovarensis, its pure white flowers being very valuable at Christmas time, and in fact whenever they are to be had. There is nothing gained by leaving the old flower-spikes on the plants, although flowers are produced from them again the following year if left on the plants. This species must have the warmest position in the house and less water than any. Similar conditions suit M. Mooreana, macrura, elephanticeps, torta, and rosea. The two former are now in bloom, less attractive ones being found in M. polysticta, melanopus, amabilis, and the hybrid Hincksiana, which may almost be termed a perpetual bloomer. Along with these in hanging baskets are growing Maxillaria Sanderiana, a magnificent species, which is just now pushing out its creeping rhizome-like flower-spikes. Previous to these showing the plants are kept drier than when growing, but as soon as it is apparent that they are about to produce flower-spikes, more water may be given, taking care in the process not to damp the spike, as they are so liable to die.

It is with the Masdevallias that we grow such plants as Cymbidium eburneum, elegans, Mastersii, and Devonianum, all of which thrive in a moist corner, excepting the latter, which is in a hanging pan; a hanging position for this being better adapted for the display of its drooping racemes. Being potted in a mixture of peat and loam they do not dry up so rapidly, and so with a good watering now and again they will go a good time without injury. In another house with a similar temperature are

Cymbidium grandiflorum and C. Tracyanum, the former in bloom, and filling the house with its fragrance, and the latter developing its spike. These have been growing in a very cool house with C. Lowianum up till the beginning of December, but were then given a little more warmth and light to develop their blooms. It is not everyone that considers C. Lowianum a cool Orchid, but the success attained here through growing it cool warrants me in terming it one of the best cool Orchids we have. The treatment followed here will be described in due course.

It is impossible to say a word about all the different Orchids in the Cool houses, so we will pass on to the Intermediate department, where are placed the Lycastes, a deserving class of plants not much grown just now. L. Skinneri is now pushing up its flower spikes, yet should still be kept moderately dry ; also L. plana, now in bloom. The deciduous kinds, such as L. cochleata, consobrina, aromatica, &c., and the strong growing L. lanipes, Barringtoniæ and mesochlæna, must be kept quite dry, except when showing signs of shrivelling, when a little water should be given. The same remarks apply to the Anguloas. Sobralias should never be kept dry for long at a time, and if the drainage is in good condition water should be given when the surface becomes dry. Miltonia vexillaria at this season is an intermediate subject, and being in full growth, requires very careful management, fluctuations of temperature, an over saturated atmosphere, and insufficient ventilation, being the chief things to guard against. Here, again, harm would result if we attempted to keep the old moss alive. the surface appearing dry, whilst immediately beneath the compost is quite moist. Small plants will naturally take water more frequently without taking harm than plants in large pots. The plants should be looked over frequently, as the edges of the inner young leaves adhere to each other, and these should be released with the aid of the thin part of a budding knife handle. If there is any suspicion of thrips being present, give a slight fumigation with Richards' XL.All, and sponge the leaves with clean tepid rain water to remove dust and dirt. Another good intermediate Orchid is Odontoglossum citrosmum, which is here grown in baskets suspended from the roof. They have now finished growing, as far as last season's growth is concerned, and should be kept very dry to induce the formation of flower spikes in the succeeding growths, that are just now beginning to show themselves. The plants will not suffer even if the bulbs shrivel, as they soon plump up again when given a good watering, and this may be done immediately after the appearance of the flower spikes.

Numerous members of the large and ever increasing "slipper" family find existence more congenial in an intermediate temperature, such, for instance, as our old friend C. insigne, which will grow in almost any temperature, but best in the one stated above. This species always has

been a general favourite, but since the introduction of the so-called "montanum" forms by Messrs. Sander, it has doubly increased its popularity, the yellow forms found amongst this importation being of such exquisite beauty and chaste character, and the generality of them good varieties. This species is invaluable for winter work, and being such an easy growing subject finds a place in every large or small collection. If there are any that need potting, it may be done about six weeks after the flowers have been cut, using well drained pots, and two-thirds peat to one-third fibrous loam, with a little moss and a sprinkling of sand for compost. Those repotted should not be watered quite so heavily as the others for a time, but at no period of their existence should they remain dry for long. This applies to all the family excepting those of the concolor section and a few others, such as Stonei, Rothschildianum, Parishii, &c., and hybrids having "blood" of the above in their veins. Space forbids mentioning many others suitable for this division, but a few are C. × Arthurianum, C. × Niobe, C. × vexillarium, villosum, Boxallii, purpuratum, &c.

We must now glance in the Cattleya house, where, with few exceptions, the occupants are at rest, the exception being C. intermedia, which is now sending up its slender growths. Another, C. Warneri, the spring-flowering "labiata," is also pushing forward, and these two must have a warm and light position, that they receive no check. All should be watered sparingly and carefully, only giving sufficient to prevent unnatural shrivelling. C. Trianæ and its varieties, and C. Percivaliana should be kept a trifle more moist now they are pushing up their flower-buds, but as soon as the flowers are open revert to the former practice, and give little water until later on in the year. Lælia anceps and varieties of L. autumnalis being in flower, will last longer if the air around them be kept moderately dry, little water being required. L. crispa is now making its new growths, but should still be kept on the dry side. The L. purpuratas have not all finished growing yet, and will take no harm from a more free use of the watering pot. Cœlogyne cristata thrives best at the coolest part of this house, and is now in the interesting condition of flower production, and considerable care is necessary when watering not to wet the bracts enclosing the buds, or they may turn black and die.

Passing on to the Warm or East Indian house, we have so many subjects here that we can only touch upon a few of them now. All Vandas and Aerides, and plants of such-like nature, require little moisture other than that afforded by damping down, for it is much preferable to damp between the receptacles than to water the plants to keep the moss alive. Angræcums require more water as they are rooting, and in some instances sending out their flower-spikes. Phalænopses, which require the heat and other

conditions of the East Indian house, are better managed when in a house by themselves; just now they are making a brave show, such species as P. amabilis, grandiflora, Schilleriana, Stuartiana, and the natural hybrids leucorrhoda and casta are in bloom. A nice moist atmosphere must be maintained, as much less water need be given to the plants direct when it is present in the air. It is wonderful how dry these plants may be kept without injury, considering they have no bulbs. I find the roots keep alive longer when treated so. The pretty autumn flowering P. Esmeralda should now be kept quite dry, for naturally this is a deciduous species. Of course a good soaking now and again will help it to retain its leaves. The Dendrobiums are mostly at rest, and need little attention yet awhile, giving water when the bulbs begin to shrivel. For such species as D. nobile, Wardianum, crassinode, and the hybrids Ainsworthii, splendidissimum, &c., the conditions prevailing in the Cattleya house are suited to their requirements just now. D. chrysanthemum is making new growths, and should have the lightest and warmest position in the Warm house, giving little water, however, yet, as it is not making many roots. D. Phalænopsis, having finished flowering for this season, should be given a very decided rest until new growth recommences. The comparatively new Eulophiella Elizabethæ is proving a good Orchid to grow, most persons meeting with a certain amount of success in its cultivation. The growths have now about reached their limit, and if kept rather drier at the root now, it will induce the plant to send up its flower spikes.

Keep the temperatures as near the required standard as possible, keep up the requisite degree of humidity, and the air pure and sweet, if possible, by careful ventilation, and, as advised above, keep most of the plants on the dry side, and little harm will reach them during this month.

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THERE was a fine display of Orchids at the Royal Horticultural Society's meeting at the Drill Hall, James' Street, Westminster, on November 24th last, one of the most interesting exhibits being a hybrid Odontoglossum raised in the collection of Norman C. Cookson, Esq., between O. Hallii and O. crispum, to which a First-class Certificate was given.

Baron Schröder, The Dell, Egham (gr. Mr. Ballantine) sent a group of cut Orchids of great merit, to which a Silver Banksian Medal was given. It included the handsome Sophro-cattleya × Calypso, with flowers four inches across, Odontoglossum Pescatorei Schrœderianum, O. crispum Chestertoni, Cypripedium × Niobe, Dendrobium Phalænopsis, Lælio-cattleya × exoniensis, and the beautiful L.-c. × Baroness Schröder.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent the pretty Sobralia Lindeni, and Lælia × juvenilis (L. Perrinii ♀ × L. pumila ♂), an Award of Merit being gived to the latter.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), sent Cypripedium × Chapmanii, and a remarkable hybrid Odontoglossum artificially raised from O. Hallii leucoglossum ♀ and O. crispum Cooksoni ♂. To the latter a First-class Certificate was given.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook) sent the handsome Lælia autumnalis alba, the curious little Epidendrum (Nanodes) Matthewsii, and a fine form of Lælio-cattleya × Schilleriana called Ashworth's variety, to which an Award of Merit was given.

G. S. Ball, Esq., Ashford, Wilmslow (gr. Mr. Hay) showed the handsome Cattleya labiata alba, and a very richly coloured form of the species called Ashford variety, to which an Award of Merit was given.

E. H. Woodall, Esq., St. Nicholas House, Scarborough, sent a magnificent plant of Vanda cœrulea with seven growths and five splendid racemes, to which a Cultural Commendation was given.

F. W. Moore, Esq., Royal Botanic Garden, Glasnevin, received a Botanical Certificate to the interesting Acanthophippium javanicum.

Frau Ida Brandt, Riesbach, Zurich (gr. Mr. Schlecht) sent the remarkable Brassavola cuspidata, Vanda coerulea, Oncidium Forbesii, Odontoglossum Harryanum, and O. Insleayi splendens.

W. Bryant, Esq., Stoke Park, Slough (gr. Mr. Kemp) sent a fine plant of Cattleya labiata with an inflorescence of four large and light-coloured flowers.

Admiral Cator, Hazelwood, King's Langley (gr. Mr. Day) sent the rare and interesting Cymbidium cyperifolium.

Walter C. Clark, Esq., Sefton Park, Livepool, sent Cypripedium × polychromum (C. × politum ♀ × C. superbiens ♂).

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howes), showed the graceful little Liparis longipes and Cypripedium insigne Sanderianum.

Sir William Marriott, Down House, Blandford, showed a most interesting hybrid in Sophrolælia × Marriottii, derived from Sophronitis grandiflora ♀ and Lælia flava ♂. It has the habit of the former, and an inflorescence of three orange-coloured flowers, most like the seed parent, but with an elongated front lobe of the lip, as in Lælia flava.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), sent Cypripedium × Regina (C. × Leeanum ♀ × C. Fairrieanum ♂), C. × Edwardii superbum, C. × Olenus, and Lælio-cattleya × Sallieri.

G. O. Sloper, Esq., Westrop House, Highworth, showed a good Cypripedium × Leeanum.

W. J. Thompson, Esq., Walton Grange, Stone, Staff. (gr. Mr. Stevens)

sent the rare and pretty Odontoglossum × elegantius, and a series of a dozen fine drawings of rare Orchids in his collection.

H. Worthington, Esq., Abbey Lawn, Whalley Range, Manchester, sent the handsome Catasetum × splendens Worthingtonianum, with large ivory white flowers tinged with purple on the lip and petals.

Reginald Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz), sent Cypripedium × Niobe, C. × Pitcherianum magnificum, and several distinct varieties of C. insigne.

Miss N. Roberts, 72, Loughborough Road, Brixton, S.W., showed a collection of well-executed coloured drawings of Orchids.

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, staged a magnificent group, to which a Silver Flora Medal was given. It contained the beautiful Lælio-cattleya × Decia, L.-c. × Lady Rothschild, L.-c. × Statteriana, L.-c. × Pallas, Cattleya × Chloris, C. × Fabiola, Phalænopsis × intermedia Brymeriana (a home-raised example), Anguloa uniflora Turneri, Dendrobium subclausum, D. glomeratum, D. × Cassiope, D. × euosmum leucopterum, Lælia × Omen (L. purpurata ♀ × L. autumnalis ♂), with light rose-coloured flower, Cypripediums, &c. First-class Certificates were given to the very handsome Cypripedium × Baron Schröder (C. × œnanthum superbum ♀ × C. Fairrieanum ♂), in which the characters of both parents were well represented; to Lælio-cattleya × Decia alba, a most beautiful form, with pure white sepals and petals, and the lip light rose-pink; and an Award of Merit to Lælio-cattleya × Tiresias (C. Bowringiana ♀ × L.-c. elegans var. Turneri).

Messrs. F. Sander and Co., St. Albans, received a Silver Banksian Medal for an interesting group, containing some good plants of Dendrobium Johnsoniæ, D. Fairfaxii, the handsome Spiranthes colorata var. maculata, Odontoglossum Krameri and O. K. album, Eonia polystachya, Sophronitis grandiflora, Cymbidium × Winnianum, C. giganteum, Lælio-cattleya × albanense, Cypripedium × Mrs. C. Maynard (C. × nitens ♀ × C. Boxallii ♂), C. × Leeanum giganteum, C. × L. reticulatum, C. × L. superbum, C. × L. virginale, &c.

Mr. James Douglas, Great Bookham, Surrey, received an Award of Merit for Lælio-cattleya × Apollonia, a showy hybrid with light rose-coloured sepals and petals, and a dark crimson-purple lip, with a crisped lilac margin.

The last meeting of the year was held on December 15th, when there was an exceptionally fine show of Orchids at the Drill Hall, to which the winter-blooming Calanthes contributed very largely.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White) staged a large and very brilliant group, to which a Gold Medal was awarded. The Calanthes in this group were numerous and very

handsome, and included C. × burfordiensis, C. × Veitchii splendens, C. × V. lactea, a clear white form, C. × Victoria-Regina, C. × jucunda, light rose, C. × revertens, carmine-rose, C. × nivea, white with yellow eye, C. × Bryan, and C. × William Murray. The group also included Masdevallia Veitchii grandiflora, M. × Henriettæ, M. polysticta, M. tridens, M. pachyura, the rare Zygopetalum Burkei, Cycnoches maculatum with a long drooping raceme, a pretty hybrid of Cattleya Schilleriana, of which the second parent is not recorded, Dendrobium Wattii, Cypripedium × Lawrebel, C. × conco-Lawre, C. × Fascinator, &c. Botanical Certificates were given to Brassavola venosa, a fine plant of Platyclinis uncata, and the graceful and fragrant Bulbophyllum auricomum, and a Cultural Commendation to a very fine specimen of Maxillaria lepidota, densely covered with flowers.

J. T. Bennett-Poë, Esq., Holmewood, Cheshunt (gr. Mr. Downes), received a Silver Flora Medal for an effective group of well-grown Orchids, including some fine examples of Calanthe × Veitchii, C. vestita rubro-oculata and C. v. luteo-oculata, Zygopetalum intermedium with five fine racemes, a very dark form of Vanda cœrulea, Lælia pumila præstans, L. autumnalis, Cypripedium insigne Chantinii, C. × Leeanum giganteum, and a fine hybrid, apparently derived from C. Spicerianum and C. × Charles Canham.

E. Ashworth, Esq., Harefield Hall, Wilmslow, received a First-class Certificate for a very handsome albino called Lælia præstans alba E. Ashworth. He also sent Cypripedium insigne giganteum.

Baron Sir H. Schröder, The Dell, Egham, sent cut inflorescences of several fine Orchids, including Odontoglossum crispum Schrœderianum Cypripedium insigne Sanderianum, C. × Galatea, C. × Leeanum superbum, C. × L. giganteum, Lælia anceps virginale, L. a. Schrœderiana, L. a. Amesiana, L. a. Chamberlainiana, L. a. Protheroeana, L. a. Stella, &c. A Vote of Thanks was awarded.

G. Shirland Ball, Esq., Ashford, Wilmslow (gr. Mr. Hay), sent Cypripedium × Leeanum magnificum, with the dorsal sepal over three inches across, and C. × Swinburnei magnificum, also exceptionally fine.

H. B. Boardman, Esq., Thorn Leigh, Burton, Westmoreland, sent a good Cattleya labiata and three forms of Cypripedium insigne.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whiffen), showed a small group, including Cymbidium × Winnianum, Cypripedium Charlesworthii, and others, Odontoglossums, &c.

M. Otto Froebel, Zurich, sent cut blooms of Odontoglossum × Coradinei, Cymbidium giganteum and Cypripedium × Leeanum multipunctatum.

F. C. Jacomb, Esq., Cheam Park (gr. Mr. Turner), showed Odonto-

glossum × Andersonianum leucochilum, in which the lip is unspotted.

Major Joicey, Sunningdale Park (gr. Mr. Thorne), sent two well-grown and flowered plants of Dendrobium Johnsoniæ.

S. G. Lutwyche, Esq., Beckenham (gr. Mr. Paterson), showed a small group of hybrid Cypripediums.

Major Mason, The Firs, Warwick, sent Cypripedium insigne giganteum.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent Maxillaria setigera.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), showed Cypripedium × Roberti, C. × annamense, and C. × Lucienianum.

J. W. Temple, Esq., Leyswood, Groombridge (gr. Mr. Bristow), sent Lælia anceps Amesiana.

Messrs. James Veitch & Sons, Chelsea, showed a very fine group, to which a Silver Flora Medal was given. It contained Lælio-cattleya × Semiramis (L. Perrinii ♀ × C. Gaskelliana ♂), the brilliant Epiphronitis × Veitchii, Epidendrum × Endersio-Wallisii, E. × elegantulum, Lælia × Stella, Cymbidium cyperifolium, the richly-coloured Cypripedium × Tityus, C. × Zeno, C. × Niobe, several fine forms of C. × Leeanum, C. × Œnone, C. × Sallieri, C. × T. B. Haywood, C. × Arthurianum, Selenipedium Boissierianum, &c. A First-class Certificate was given to Lælio-cattleya × Rosalind (C. Trianæ ♀ × L.-c. × Dominiana ♂), a large and handsome light-blush flower, with rose-purple front lobe of the lip and veined disc.

Messrs. F. Sander & Co., St. Albans, staged an interesting group, including Cattleya Percivaliana amœna, C. chocoensis Downside var., white with a small purple spot on the lip, a very fine pan of Dendrobium Johnsoniæ, D. sanguinolentum, Lælia autumnalis alba, L. a. delicata, L. × Gouldiana, Phaio-calanthe × Arnoldiæ, Cymbidium × Winnianum, Æonia polystachya, the pretty Trichopilia brevis, Spiranthes colorata var. maculata, Cypripedium × Dauthieri The Albino, C. × Alcides, C. × Adrastas, C. × Lynchianum, C. × Leander, several varieties of C. × Leeanum, &c. A Vote of Thanks was given.

Messrs. Hugh Low & Co., Upper Clapton, also received a Vote of Thanks for a pretty group, including Oncidium Kramerianum, O. varicosum Rogersii, Lælia anceps, Odontoglossum grande, Calanthe × Veitchii alba, Cattleya Bowringiana, Cypripedium × Arthurianum, C. × Harrisianum superbum, various forms of C. × Leeanum, and other Cypripediums.

Messrs. Heath & Son, Cheltenham, sent a hybrid seedling obtained by crossing Zygopetalum Mackayi with the pollen of an Odontoglossum,

which resembled the mother plant with the exception that the lip was slightly wavy and pure white with some slight purple marks at the base and centre. Similar crosses have been made before in which the influence of the pollen parent could not be traced in the seedlings.

## MAXILLARIA GRANDIFLORA ALBA.

An albino of Maxillaria grandiflora has appeared in the collection of Sir Frederick Wigan, Clare Lawn, East Sheen. Every trace of purple has vanished, both from the petals and lip, leaving the flower pure white, with only a little yellow on the disc. In other respects it agrees with the typical form, which is growing side by side with it, though the difference in colour gives it a very distinct appearance.

R. A. R.

## ORCHID PORTRAITS.

Catasetum semiroseum, G. Beck in *Wien. Ill. Gart. Zeit.*, Dec., p. 423, t. 4. This is a rosy form of C. × splendens, Cogn.

Coelogyne Veitchii, Rolfe.—*Gard. World*, Dec. 26, p. 265, with fig.

Cypripedium × Baron Schröder.—*Journ. of Hort.*, Dec. 3, p. 533, fig. 92; *Gard. Mag.*, Dec. 26, p. 890, with fig.

Cypripedium Exul, Rolfe.—*Bot. Mag.*, t. 7510.

Cypripedium × Galatea majus.—*Journ. of Hort.*, Dec. 31, p. 627, fig. 108.

Epiphronitis × Veitchii.—*Rev. Hort.*, Oct. 16, p. 480, with plate.

Grammatophyllum Rumphianum, Miq.—*Bot. Mag.*, t. 7507.

Lælia autumnalis Fournieri.—*Rev. Hort.*, Dec. 1, pp. 547, 548, fig. 188, and plate.

Odontoglossum Hallii nigrum.—*Journ. of Hort.*, Dec. 24, p. 603, fig. 103.

Sophrocattleya × Calypso.—*Gard. Chron.*, Dec. 5, p. 695, fig. 122.

## CORRESPONDENCE, &c.

W. J. R., Maghull. Apparently a hybrid between Cypripedium insigne and C. Lawrenceanum, and thus a variety of C. × Eucharis—if that is the oldest name of this hybrid. A pretty light form of Lælia anceps.

H. J. R., Florence.—We believe there is no reliable evidence of the existence of Cypripedium × Sallieri in a wild state. It was raised artificially by crossing C. villosum and C. insigne.

W. E., Newchurch. Odontoglossum triumphans.

F. L. M., Florida. Epidendrum atropurpureum (large), and E. paniculatum (small).

We have received the General Catalogue of Messrs. B. Hurst & Son, Orchid Importers and Nurserymen, Burbage Nurseries, near Hinckley, containing a selection of the more commonly cultivated Orchids.

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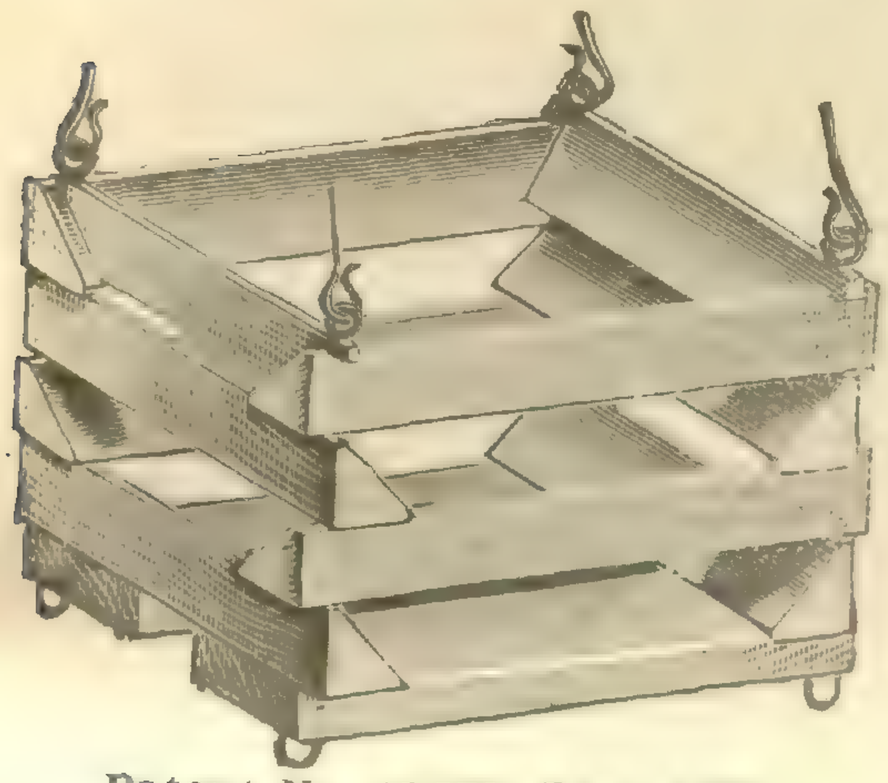

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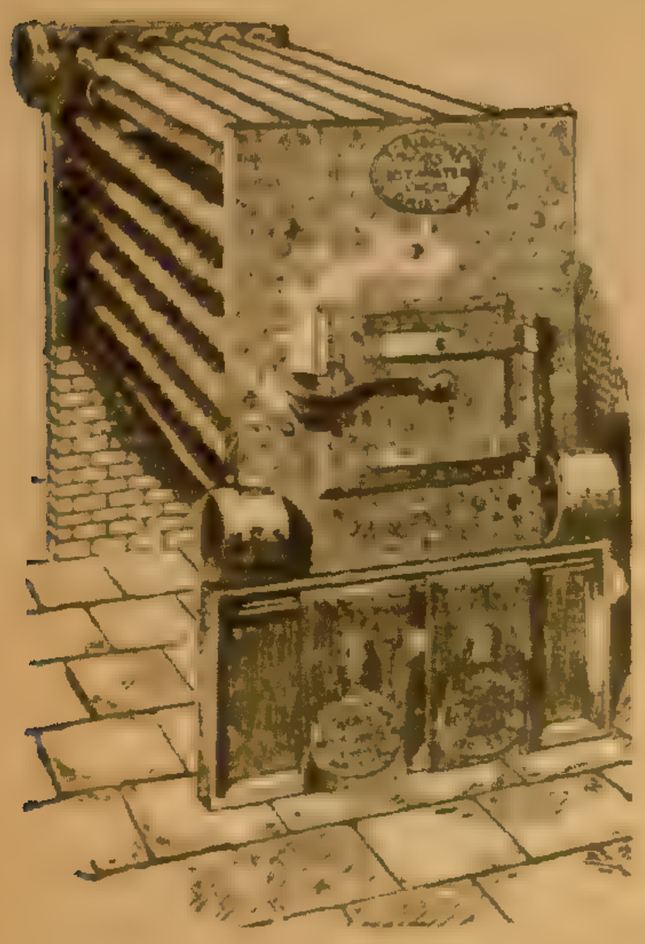

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# THE ORCHID REVIEW:

## An Illustrated Monthly Journal,

## *DEVOTED TO ORCHIDOLOGY.*

Contents.


| | PAGE |
|---|---|
| Ammonia for Orchids ... ... ... | 43 |
| Calanthes at Arundel Castle ... ... | 45 |
| Calendar of Operations for February ... | 56 |
| Correspondence, &c. ... ... ... | 64 |
| Cypripedium Charlesworthii abnormal | 44 |
| Cypripedium × Dauthieri sport ... | 52 |
| Cypripedium × Sallieri ... ... | 51 |
| Dies Orchidianæ ... ... ... | 40 |
| Figures of Certificated Orchids ... | 43 |
| Hybridist ... ... ... ... | 37 |
| Paphiopedium × niveo-insigne ... | 37 |
| Mormodes luxatum eburneum (Fig. 4) | 49 |
| Notes ... ... ... ... ... | 33 |
| Odontoglossum crispum ... ... | 45 |
| Odontoglossum Pescatorei ... ... | 63 |
| Orchid Portraits ... ... ... | 64 |
| "Orchid Review" ... ... ... | 36 |
| Orchid seedlings, the raising of, By R. Eichel ... ... ... ... | 38 |
| Orchids abroad and at home ... ... | 53 |
| Orchids at the Royal Horticultural Society ... ... ... ... | 61 |
| Varieties, are they permanent? ... | 63 |


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# THE ORCHID REVIEW.

VOL. V.] *FEBRUARY*, 1897. [No. 50.

## NOTES.

THE next meeting of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, on February 9th, when the Orchid Committee will meet at the usual hour, 12 o'clock, noon. The annual general meeting will be held at the Society's Office, 117, Victoria Street, at 3 p.m.

Two of the Society's afternoon lectures announced for the coming year relate to Orchids, namely, May 11th, "Diseases of Plants, especially of Orchids," by Mr. G. Massee, F.L.S.; and October 12th, "Some curiosities of Orchid breeding," by Mr. C. C. Hurst.

A twin-flowered scape of Cypripedium insigne Fœrstermanni has been sent from the collection of S. G. Lutwyche, Esq., Eden Park, Beckenham. The dorsal sepal is of medium breadth, and the spots of the dorsal sepal are rather small, while a few small spots are also found at the base of the petals and lower sepal. It is a very pretty variety, one of the older ones, not one of the recent so-called "montanum" forms.

Lælia anceps Bradshawiana is a very handsome variety, sent by Messrs. Hugh Low & Co., Clapton, which has flowered out of their recent importations. The sepals and petals are of a uniform bright rose-purple, as are also the margins of the lip, the disc having the usual markings. The petals are not quite twice as broad as the sepals. It is a very brilliantly coloured variety, and exceptionally rich in this respect, as Messrs. Low point out.

An albino of Cypripedium Spicerianum is sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, in which the brown markings have vanished from the petals and lip, and the purple from the staminode,

leaving the former light green and the latter white, but with the characteristic shape. The plant is weak and the flower small, but it is very distinct, and it is hoped will remain constant as it becomes stronger. A good C. × Leeanum punctatissimum is also enclosed.

A handsome form of Cypripedium × Charles Richman has been sent from the collection of Mrs. Barton, Little Silver, High Bickington, N. Devon. The dorsal sepal is over 2 inches across, light red-purple with darker veins, the petals over 2¼ inches long, similar in colour with very numerous minute dark purple dots, except at the apex, and the lip and staminode very dark. It is a richly coloured, but little spotted variety, and was purchased as an unflowered seedling eighteen months ago for £10.

A very beautiful form of Cypripedium × tessellatum has been sent from the collection of W. M. Appleton, Esq., of Weston-super-Mare. It is one of Mr. Appleton's own raising, from C. concolor ♀ and C. barbatum Warneri ♂, and most resembles the former in general character, except that the sepals, petals, and lip are strongly suffused with the bright red-purple shade, derived from C barbatum, for which this hybrid is so remarkable.

A very good form of C. insigne, and three different forms of C. Spicerianum, are also sent from the same collection, one being dark, and another much lighter than usual in the coloured parts of the flower.

Mr. Appleton also writes:—"The Cypripedium insigne with three pouches, which you figured some time ago (III., p. 361), has again flowered this year, and all four flowers had three pouches, as those which came before." It would thus appear that the peculiarity is permanent.

Respecting the abnormal Paphiopedium Charlesworthii figured at page 15, Dr. Hoisholt writes that the second bud has now expanded, and, like the first, has the lower sepal three-quarters as large as the dorsal one and similarly coloured. Like so many other pecularities of this kind, it will probably prove permanent.

A very pretty yellow form of Cypripedium insigne is sent from the collection of F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey, which is almost identical with C. i. Sanderianum (*Orch. Rev.*, I. p. 145, fig. 10). It appeared as a small growth in the centre of a very common type of C. insigne, out of a recent importation of the "montanum" type.

A very pretty hybrid Cattleya is also sent from the same collection, the result of a cross between C. Leopoldi and C. Mendelii, between which it is quite intermediate. The sepals and petals are light rose-pink, and the

strongly three-lobed lip has the front lobe and tips of the side lobes rose-purple, the remainder being nearly white. It is a variety of C. × Harrisii, and has probably not yet reached its full development.

Cypripedium × Ashburtoniæ roseum is a very fine and richly-coloured variety, raised in the collection of O. O. Wrigley, Esq., Bridge Hall, Bury. The lip and petals are unusually dark, having taken the colour of C. barbatum very largely.

A seedling from C. × superciliare ♀ and C. Hookeræ ♂ is also sent from the same collection, most resembling the latter, but lighter in colour, in which and other respects the influence of the seed parent is seen. It has probably not yet reached its full development.

Two seedlings of C. × nitens are also enclosed. The cross was made in January, 1889, and five seedlings germinated, one of which flowered in December, 1895, and now two others have followed, so that they have taken six to seven years to reach the flowering stage, though very strong and healthy.

A photograph of a very handsome form of C. insigne called Upland's variety is also sent, the flower being perfect in shape, and the dorsal sepal $2\frac{3}{4}$ inches across, with very dark spots. It was purchased when the Selly Hill collection was disposed of, and Mr. Winn is said to have considered it one of his best Cypripedes.

A curious flower of Odontoglossum odoratum comes from the collection of Mrs. Holland, Wonham, Bampton, Devon, with seven sepals and petals, two lips, and two columns fused together side by side. The ovary is also somewhat flattened, and the example apparently consists of two flowers fused into one.

An inflorescence of a richly-coloured form of Odontoglossum × Ruckerianum has been sent from the collection of W. J. Thompson, Esq., Walton Grange, Stone, by Mr. Stevens. The sepals are suffused with light rose, and bear two or three large irregular deep red-brown blotches, while the petals are nearly white, with several small spots. The lip also bears one large blotch in front and a small spot on either side of the crest. It is a very pretty form.

A photograph and flower of Cypripedium insigne Youngiæ is sent from the collection of Reginald Young, Esq., Sefton Park, Liverpool, in which the dorsal sepal is not only very heavily blotched, but the petals bear numerous medium-sized spots along the nerves right to the summit, and the lower sepal is also spotted at the base. It was purchased with some twenty others at Messrs. Protheroe and Morris' in 1890, and has not flowered until this year. It is very distinct and striking.

Two good forms of Cypripedium × Leeanum are sent from the collection of F. M. Burton, Esq., Highfield, Gainsborough, which are seedlings raised in the collection. This is, perhaps, the most useful hybrid in the genus, and appears to have been raised by many different people. A very pretty form of C. venustum is also enclosed.

A very good form of Cattelya Trianæ has been sent from the collection of John Falconer, Esq., St. Anne's, Lasswade, Midlothian, in which the petals have a large purple blotch at their apex. Thus it comes near the variety Ernesti, which is different in some other respects.

A form of Lælia anceps is also sent, which has broad petals as in the variety Dawsoni, though the front lobe of the lip has not the large purple blotch of that variety. It appears to be the variety vestalis.

A handsome flower of Cypripedium × calanthum is sent from the collection of H. Gurney Aggs, Esq., Pippbrook, Dorking. It is one of Messrs. Veitch's early hybrids between C. barbatum Warneri ♀ and C. Lowii ♂, and mostly resembles the latter in the flower.

Two or three mistakes in our two last issues should be pointed out. The present possessor of Phalænopsis × Schilleriano-gloriosa (p. 4) is G. F. Moore, Esq. (not "Bourton"). The date of the Royal Horticultural meeting recorded at p. 374 is November 10th (not "14th"), and the inclusion of Cypripedium × Baron Schröder at the last moment in the list of complex Cypripedium hybrids makes the numbers given at foot of page 362 all one too low.

## THE ORCHID REVIEW.

We have to thank our esteemed correspondents, Reginald Young, Esq., and E. H. Woodall, Esq., for their kindly appreciative notes respecting the *Orchid Review*, contributed to our last issue (pp. 8-9), and the former for the reminder that the present issue is our Jubilee number. Those of our readers who have followed the work from its commencement, or who are able to compare the first issue with the present one, will realise the progress made in the comparatively short time which the work has been established. There is no need to repeat our original programme, as most of our readers are familiar with it, and will be able to judge how far it has been consistently followed. And we have the satisfaction of knowing that the work has gained for itself a steadily increasing circle of readers wherever Orchids are grown, and that our policy is widely appreciated, not only in Great Britain, but on the Continent, in the United States, and elsewhere. Each year we have received numerous letters to the same effect, probably not intended for publication, as those above alluded to certainly were, and we assure all our

correspondents that we appreciate their kind encouragement and assistance.

With respect to the future, a few words may not be out of place here. It will be obvious to everyone that in the effort to keep a complete record of the most important events in the Orchid world we have to rely to some extent upon the assistance and co-operation of our readers and correspondents, and in thanking them for numerous interesting communications in the past, we would solicit increased help in the future. Short notes or articles upon interesting specimens in their collections, the results of their experiments in hybridisation, the successful treatment of Orchids reputed to be difficult of cultivation, and discussions on any subject of general interest will be cordially welcomed, and will doubtless help to give the *Review* an even wider interest to cultivators. Probably much valuable information of this kind is lost because the possessors do not think it of sufficient importance to communicate; and we should be glad if such matters are sent in a form for publication, not incorporated in a letter, as has several times been the case, for besides the trouble of extracting it, there is always the uncertainty as to whether the matter was intended for publication. It may also be mentioned that photographs intended for reproduction should have a well-contrasted background, and printed upon albumenised paper, as bromide and platinotype impressions on rough paper never give such good results. It is unnecessary to reiterate that, so far as space permits, our pages are open to *bona fide* communications from anyone, and that we aim at making the work of the widest possible interest and utility, in which we invite the co-operation of all our readers.

## THE HYBRIDIST.

### PAPHIOPEDIUM × NIVEO-INSIGNE.

WE have received from Messrs. F. Sander and Co., St. Albans, a flower of a very charming little hybrid raised by Captain Vipan, Stibbington Hall, Wansford, between P. niveum and P. insigne, the former being the seed parent. The flower most resembles the former in general character, but the segments are more attenuated, and the colour white, with a number of clear purple spots on the dorsal sepal, derived from P. insigne, the clear colour of the spots being, of course, due to the absence of green in the ground colour, just as may be seen in the latter species when the spots extend beyond the green area. The hybrid known as Cypripedium × Muriel Hollington was described somewhat doubtfully as having this parentage, but Mr. Hollington says that insigne was not used as the pollen parent, and that it came out of the same batch of seedlings as P. × Aylingii, which seems conclusive, especially as the spots on the dorsal sepal of the present one are so different. We should like to see the former one again. The present hybrid is very distinct and pretty, and we shall hope to hear of it again.

# THE RAISING OF ORCHID SEEDLINGS.

By R. EICHEL, Bradford.

THE fascinating hobby of "Orchidlore," the raising of Orchids from seed, has a great deal of pleasure as well as many disappointments, though a certain amount of pecuniary interest may be derived from this source, if carried out in a proper systematical manner. The fertilising organs of an Orchid flower have been fully described in previous pages of the *Orchid Review* (vol. II., p. 50), and it is needless to recapitulate the process; one thing, however, I wish to emphasise and point out to the intending operator, namely, that he should pause a moment and well consider the possible chances of his labours before proceeding to hybridize. Several exhaustive lists of the existing garden hybrids have been published, and these should be consulted and act as a guide. The blending of colours, the shape of flowers, increased floriferousness, are matters of no small consideration. The cardinal point, however, is the selection of seed parents, plants of robust health, which will stand the strain of seed-bearing and produce good seed. Experienced hybridizers will know the difficulty encountered with some plants which do not produce good seed, in spite of unremitting trouble and care. The published lists will again act as a guide as to those which it is best to select as seed-bearers; such plants as have previously acted in the same capacity, and of which I intend publishing a list later on.

Cypripediums are easily raised from seed, as proved by the numerous crosses effected by various raisers; Dendrobiums also have enriched our collections by numerous crosses, and some varieties appear to have been raised with good success; while Cattleya and Lælia seedlings have not been raised so numerously, owing, perhaps, to being very subject to decay when in a thalloid state. The least success has been achieved with Odontoglossums, which have baffled the skill and ingenuity of the most experienced growers.

It is most essential to keep a proper record of all the crosses effected, and for this purpose a book should be kept, each page being ruled into six columns, the first column indicating the number of the cross effected, the second one for the name of the parents, the third for the date when the cross was effected, the fourth for the date when the seed germinated, the fifth for the date when the seedlings were pricked off or potted, the sixth for general remarks as to quality of parents, &c. As soon as the flower is fertilised a corresponding number should be attached; and for this purpose small celluloid labels ($\frac{1}{8} \times \frac{1}{4}$ of an inch) can be highly recommended as neat and indestructible, as when attached to the stalk of the flower with thin copper wire they will last for years.

THE SOWING OF SEED.—It is most difficult to lay down hard and fast rules for this important work. In every instance it is advisable to sow the seed as soon as ripe, with the exception, perhaps, of the dull months of November, December, and January, when the seed vessels should be wrapped up in paper, and kept in the house where the plants grew. The seed nearest to the column is invariably the best and most fertile, and can be depended upon. Specially prepared pots should be kept in readiness, and as soon as the seed vessel approaches the ripening stage the seed should then be soon thinly on these pots, placed in a propagating frame, and kept in a uniform moist temperature of about 80 to 85 degrees.

The frame which is most suitable is one made sloping to the walls of the house, 2ft. 6in. wide, 18in. high in front, 12in. high at the back, the front should be moveable on hinges to admit of syringing between the pots, and the frame heated by three row of 1in. pipes, two flows and one return, with a valve for regulation. A layer of 3in. rough and 1in. fine ballast should be placed in the bottom, to retain the moisture, and thereupon the seedling pots should be placed on inverted pots or zinc trays. By letting down the hinged front the syringe can be applied when needful. Thus treated the seedling pots require little or only occasional spraying, with Stone's patent sprayer, a capital and useful instrument. Special attention must be paid to the ventilation of the frame, to get rid of the superfluous moisture which is sure to accumulate. According to the season the seed will begin to germinate in due time, the good seed will turn slightly green and swell in the centre, like a small cucumber, and ultimately form a small globule, which in its turn will produce a tiny leaf. Now is the time for the operator to keep his watchful eye open, and prick off all those which are fit, a tedious work, requiring a great deal of patience and good eyes. A thin sharpened stick, or, even better, the handle of a toothbrush ground to a fine point is the best instrument to recommend. The pricked off seedlings should now be placed back into the frame, and treated as recommended before. Three weeks is about the average time for the pots to remain in the frame, to ensure success, and they may then be removed into a slightly cooler compartment; ten seedlings in a 2in. pot is quite sufficient for the time being; for choice I prefer to prick them round the edges of the pot, they appear to thrive better, and are less subject to decay. Twelve to eighteen months is about the time allotted for them to stay in tens, when they require to be potted into single pots according to growth.

POTTING MATERIAL.—The success of raising seedlings mainly depends upon the seed-beds, no matter if it is a pot with a growing plant, or one specially prepared for the purpose. The very best fibrous peat only should be used, well beaten out; added to this one-half of the best French

Polypodium fibre, similarly treated. The whole should be placed in a jar or a tin, and placed in a slow oven to bake for several hours. This process will kill any rhizomes and spores. On the following day it will be ready for use; cut up with a pair of sharp scissors, add a small quantity of fresh sphagnum heads, mix well up, and fill the pots in the usual way ready for use when they are wanted; the process of filling the pots requires a certain amount of attention and skill, and the potting material should be pressed evenly and firmly. Orchid seedlings are very erratic in their way, and often appear in the least expected places. While conversing with Mr. Charles Winn he related his experience regarding his best seedling Cymbidium × Winnianum, which he found growing underneath the trellis work of the staging.

*(To be continued).*

## DIES ORCHIDIANÆ.

EXACTLY a year ago (page 36) I called attention to a series of special prizes offered by the Royal Horticultural Society for new plants of 1896. The competition was to extend throughout the year, and the judging was to be by points, which were to be duly kept and recorded, and the winners were to be announced at the end of the season. On looking through the Report of the Council for the year 1896-97, and the arrangements for the coming season, I fail to find any reference to the subject, and am a little curious to know the reason. Has the competition broken down? And if so, why? I note that 303 awards have been made during the year on the recommendatien of the Orchid Committee, including 85 medals of various kinds, but none of these appear to be the special ones above mentioned; and in any case the winners are not announced. There are also 36 First-class Certificates, 100 Awards of Merit, 47 Botanical Certificates, and 35 Cultural Commendations.

---

The Council "again express their opinion that there still appears to be a tendency to multiply unduly the awards recommended, and they earnestly request the several Committees to consider seriously whether there is not a real danger of impairing the value of these distinctions by such increase in their number; and whether it would not be possible, as well as politic, to be somewhat less generous in the recommendation of awards during the ensuing year." They also announce that "at the unanimous request of the Orchid Committee, and on certain Members of it undertaking to pay a third of the expense, the Council have arranged to have paintings made of all the flowers Certificated by this Committee. . . . The Orchid Committee desire to have these paintings as an accurate record of the characters and peculiarities of the plants to which awards are made, finding it practically

impossible for their Members to bear in mind the details of numerous flowers often seen but once."

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This is interesting, and I rather expected something of the kind. How will it work out in practice? At the very first meeting of the year an Award of Merit was given to Cypripedium × Lilian Greenwood, a hybrid from C. bellatulum ♀ and C. barbatum Warneri ♂. Of course it will be painted, and then I believe the Committee will really "bear in mind the details" of this hybrid between C. barbatum and C. bellatulum, for it has been before them more than "once." Here is the record:—

| | | |
|---|---|---|
| C. × Charles Richman. | May 9th, 1893. | Award of Merit. |
| C. × Leysenianum. | June 26th, 1894. | First-class Certificate. |
| C. × Charles Richman. | Sept. 11th, ,, | ,, ,, |
| C. × François Peeters. | Oct. 15th, 1895. | No award. |
| C. × Marchioness of Salisbury. | Nov. 12th, ,, | First-class Certificate. |
| C. × barbato-bellatulum. | Mar. 10th, 1896. | No award. |
| C. × Lilian Greenwood. | Jan. 12th, 1897. | Award of Merit. |

This, I suppose, is termed a "tendency" to multiply unduly the awards. How many more names does the Committee intend to recognise for this hybrid? On the third occasion enumerated above they changed the name from C. × Météore to C. × Charles Richman before granting the award named. Why did they not adopt the same course on other occasions? Look at Mr. Chamberlain's remarks about Masdevallia × Chamberlainiana and Shuttryana (*Orch. Rev.*, IV., p. 133), and then at the above list, and let me know the result, but pray don't use strong language. Read also the rules for the nomenclature of Orchids prefixed by the Society to its official list of awards, and compare the above with the way hybrids between C. insigne and Spicerianum are named. The other day I stumbled across the following:—"Vernacular names.—We have a suspicion that common names made all that great trouble at the tower of Babel."—*Gardeners' Monthly* (*Gard. Chron.*, 1876, VI., p. 811). The above is a good illustration.

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Last month I alluded to Messrs. Sander's very interesting hybrid Calanthe × albata (p. 6). In the *Gardeners' Chronicle* for January 9th (p. 16) I read:—"Of other hybrids remarkable are Calanthe Novelty (veratrifolia × Cooksoni), the first break between the evergreen and the deciduous species." Where did that name come from? On November 14th they alluded to it (p. 602) as "the singular Calanthe × albata (veratrifolia × Cooksoni ×), a curious break between the evergreen and the deciduous Calanthes, with white flowers intermediate between the parents." It was certainly exhibited and recorded under the latter name, and I suppose the change may be attributed to that craze for the vernacular of which we have

seen too much of late. But what a name! and especially for a plant which is not likely to be lost sight of for many years to come. Of course I could not have been thinking of this case when last month I wrote:—"The alteration of names well known in gardens is an undoubted nuisance," and especially when I added, "but it is sometimes necessary," and I strongly advise those who may have the plant to stick to the original name.

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Another very interesting event in the Orchid world has to be recorded, namely, the successful raising from seed of the beautiful albino Cypripedium Lawrenceanum, in the collection of Norman C. Cookson, Esq. The seedling thus raised is figured in the *Gardeners' Chronicle* for January 16th (pp. 36, 37, fig. 8), and it is very interesting to note that it has come true from seed. I have often wondered why some other rarities have not been multiplied in this way, and especially the beautiful Cypripedium Fairrieanum, on the attempted re-discovery of which much energy has been expended. I do not know if the attempt has yet been made, but if not, I would recommend the experiment to Mr. Cookson. There are plenty of hybrids from it, but I believe that in every case C. Fairrieanum has been the pollen parent, one or two records to the contrary notwithstanding. Some means of multiplying this beautiful species is a desideratum, and there is something besides credit awaiting the one who succeeds in accomplishing this.

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I observe a very instructive note in the *Gardeners' Chronicle* for January 23rd (p. 54), with respect to the original specimen of Selenipedium Boissierianum and that astounding act of Reichenbach in sealing up his Herbarium for the period of a quarter of a century after his death. In describing the plant, Reichenbach observed:—"We know of only one specimen . . . ., and it gives us much pleasure to dedicate this beautiful plant, probably unique in the collections of Europe, to its proprietor, M. Edmund Boissier, to whom we are under so great obligations." Commenting on this, M. William Barbey, the present possessor of the Boissier Herbarium, remarks:—"Unfortunately, that unique specimen was never returned by Reichenbach to its proprietor. It lies buried with the rest of his Orchids for twenty-five years, along with other uniques which had been entrusted to him." I have heard a similar story before with regard to other plants, and now that it is confirmed from an authentic source, I should think, if proper steps were taken, it would be possible to set aside the provisions of the will; at all events, so far that other people might recover their own property. Perhaps facts may yet come to light which will suggest a reason for Reichenbach's preposterous act, which no one, not even its eccentric author, has yet satisfactorily explained.

ARGUS.

## FIGURES OF CERTIFICATED ORCHIDS.

An important step has now been taken by the Royal Horticultural Society in the matter of obtaining drawings of Certificated Orchids, to which allusion was made at page 356 of our last volume. In the Council's Report we note :—" At the unanimous request of the Orchid Committee, and on certain Members of it undertaking to pay a third of the expense, the Council have arranged to have paintings made of all the flowers Certificated by this Committee. Exhibitors must, therefore, distinctly understand that in submitting their flowers in future to the Committee they thereby tacitly consent to their being painted should they obtain any award, and must hold themselves ready to give all reasonable facility to the Society's artist to do so. The Orchid Committee desire to have these paintings as an accurate record of the characters and peculiarities of the plants to which awards are made, finding it practically impossible for their Members to bear in mind the details of numerous flowers often seen but once."

## AMMONIA FOR ORCHIDS.

This subject has interested me for years, and I have made many experiments to satisfy myself if stimulants were beneficial or prejudicial to the growth of an Orchid. I have tried manures, both in a liquid and solid form, for epiphytes and terrestrial Orchids, and have never found any lasting benefit to result from the application, but usually the reverse effect, in the way of decaying roots and the general ill-health of the plants. I have, however, for upwards of six years, treated my plants to atmospheric stimulant, in the form of ammoniacal vapour, with the most beneficial results, not only as shewn in the increased vigour of the plants, but also in respect to the improved colour of the leaves of all Orchids which have been subjected to this vapour. During this period all my Orchids have been treated to an ammoniacal vapour-bath on every Monday and Thursday night, after the houses have been thoroughly damped on floors and stages, and all ventilators tightly closed. The method is simple, but effective. Soot and lime are the two substances used for the production of the ammoniacal vapour, but instead of mixing these ingredients together, and using the mixture dry, as some do, I prefer to have the ammonia in solution, as I have found there is much less risk of injury to the leaves by the use of the liquid solution than of the solid mixture. The liquid can be spread more evenly over the cinder-covered stages, and gives off its ammonia more slowly, and with less risk to the plants.

In mixing the soot and lime, one bucketful of soot and half-a-bucketful

of lime are put into a tub with twelve gallons of water, and, after being thoroughly mixed, the liquid is allowed to stand for about three days, when it is ready for use. In practice the tub is re-filled with water, soot and lime, after the necessary quantity has been used, so that the mixture always stands three or four days before it is required again. No care is taken to use only the clear liquid, for the thick mixture seems to act just as well, and is even thought to give off its ammonia more slowly than the clear liquid does. When the mixture is ready for use, and the appointed day has arrived, it is spread over the cindered stages of the Orchid houses, at the rate of about three gallons to a glass house containing 4,000 cubic feet of air space. In smaller houses a proportionately less quantity must be used.

Before finishing this note, I may explain that all the stages are constructed in one way. They are solid erections of iron, brick, and slate, covered with rough cinders to the depth of about three or four inches, and above these cinder-covered stages are pitch-pine lattices, on which all the Orchid pots stand. The liquid is put down just before the gardeners leave off work for the day, and it gives off its vapour gradually until the morning, when little or no smell is left. In the course of a year the cinders become clogged with soot, and they are then removed and replaced with fresh ones.

Bridge Hall, Bury. O. O. WRIGLEY.

## CYPRIPEDIUM CHARLESWORTHII ABNORMAL.

AN abnormal flower of Cypripedium Charlesworthii in my collection shows the following peculiarities :—The sepals are much twisted, the lower one split throughout its entire length ; the petals are much displaced, and one side of the labellum appears as if cut away with a sharp knife. A third stamen (infertile) has its origin near the base of the column, on the under side, and one half of the stigma is petaloid. The cause of these peculiarities is a small body in the ovary, which body is oval-shaped, and about as large as the pollen mass of an ordinary Cypripedium. Above it there are no ovules. It is about a quarter of an inch from the summit of the ovary, and its origin is still obscure.

OAKES AMES.

North Easton, Mass., U.S.A.

[It is difficult to suggest an explanation of the peculiarities of this flower without seeing it, but it may be that the body found within the ovary represents one of the missing parts, which has become displaced, possibly one of the side-lobes of the lip. And the third infertile stamen may be the one numbered a 3 in the Darwinian notation, which is absent in the normal flower.—ED.]

## CALANTHES AT ARUNDEL CASTLE.

THE value of the deciduous Calanthes as decorative winter-flowering plants is well known, and when the numerous hybrid forms of recent years become better known they are likely to become still more popular. A figure of a very fine group is given in the *Gardeners' Chronicle* for January 23rd (p. 57, fig. 15), grown at Arundel Castle, where the demand for flowering and ornamental leaved plants is great all the year round. The group is an excellent example of good cultivation, some of the plants of C. × Veitchii having as many as forty expanded flowers on some of the spikes, and so great is the vigour of some of the bulbs that four spikes are produced. Some were observed in which the flower spikes emerged from the extreme top of the pseudobulb. C. vestita rubro-oculata and C. v. luteo-oculata are also grown in great numbers, and do equally well. As many as five hundred spikes of these three varieties were in one house, arranged on a ground-work of ferns, producing a very fine effect. Owing to the absence of leaves at flowering time these plants look much better when arranged with various foliage plants. The secret of flowering them so well is to grow them strongly, and then give them a good rest to mature the bulbs properly. It is not everyone, however, that succeeds with them, and it would be interesting if some of our readers who grow them well would let us know their method of treatment.

## ODONTOGLOSSUM CRISPUM.

THE following interesting paper by Mr. Robert Thompson, of Bogota, is reproduced from the *Bulletin of the Botanical Department, Jamaica*, for November, 1896, where it appears under the title, "Memorandum relative to a valuable species of Orchid recommended for Naturalisation in Jamaica" (pp. 253-255):—

This species of Orchid is indigenous to the western slopes of the Eastern Cordilleras of the Colombian Andes. Its habitat extends from about 3° to 5° north.

The flowers of this species are extremely variable, ranging from inferior types or forms which are rejected by the Orchid grower, to forms comprising the most popular of all Orchids. The famous forms are confined to the centre of the area of distribution, *i.e.*, the Pacho district. The inferior forms are characterised in general by narrow floral segments—"starry" type. The fine forms are distinguished by broad floral segments, thus in contradistinction to the narrow "starry" forms. The flowers of the fine types are otherwise remarkable in their varietal diversity; numerous shades of

colour from pure white to rosy mauve—sometimes blended or tinged; their size, form, and substance; the peculiar spotting on the segments, ranging from solitary spots to groups of spots, and differently coloured spots.

The plants flower almost throughout the year, and the graceful arching racemes last in bloom about two months. In Europe the flowers are much improved by cultivation as compared with the flowers in the forest. Another advantage which contributes to the value of this plant under cultivation is that it grows only in a cool temperature. Its altitudinal range in its native habitat is from 6,500 to 9,000 feet, and the range of the temperature is from 40° to 70° Fahr.

As already indicated, this is in all probability the most popular of all Orchids in cultivation. During the past twenty years the number of plants exported to Europe has averaged not less than 100,000 a year, thus two millions. Of course many thousands perish under cultivation in Europe, and some 25 per cent. are lost in transit. The demand for these plants in Europe is increasing. This year several great Orchid growers have requisitioned 250,000 plants.

Hitherto this Orchid supply has been obtained from the Pacho district, that is from an area comprising some three hundred square miles of forest, occupying numerous spurs and ramified ridges of the Eastern Cordillera.

Some fifteen years ago this Orchid was obtainable in the Pacho district for a couple of dollars a hundred. Then a peon collector collected as many as 200 a day. Now a peon collects about ten a day; and the price of collection has increased tenfold.

Of the 250,000 desired for Europe this year it is hardly possible to supply more than a third, and this with strenuous efforts, efforts stimulated by the payment of exorbitant prices. Moreover, the result of these efforts most seriously exhaust the available supply after the spring of next year.

It is noteworthy that during the present year something like a fraud is being pepetrated upon European Orchid growers. In consequence of the difficulty of obtaining an adequate supply of the Pacho type for export, native Orchid exporters have undertaken to supply the deficiency by bringing to Pacho about 100 mule loads of the inferior types from a distant region some four days' journey. Thus during the past six months some 50,000 of the inferior forms have been conveyed to Pacho, where they are packed for transmission to Europe. These inferior forms on arrival in England are not distinguishable from the standard Pacho type until under cultivation they have flowered.

The vast majority of these Orchids grow on trees, and large numbers are cut down annually in order to secure the plants. But many plants are also found growing on the ground—on banks of moss and on rocks—in

general, but not always, under the shade of the forest, that is to say, they are frequently found in places more or less exposed to the sun. Frequently, too, when a clearing is made in the forest by fire, in rocky places, many thousands of plants spring up on these spots, on which self-sown seeds require some eight years to become strong plants.

Another circumstance which has materially diminished the resources of the Pacho district, a circumstance that threatens in the near future to exterminate the plant—at any rate for commercial purposes—is, thousands of acres of forest in which this Orchid has been dispersed are yearly cut down for the establishment of pastoral farms—a great industry on these elevated lands. Also some eight years ago, during an exceptionally prolonged drought, many thousands of acres of forest, on which these plants abounded, were destroyed by fire.

In a state of nature seeds of this Orchid are produced in vast abundance. The seeds, being extremely minute and light, float in the air. Millions are thus disseminated yearly.

The price of the newly-imported plants in the sale-rooms in London, according to the size of the plant, averages from half-a-crown to half-a-guinea each. It may be anticipated that the price will be augmented owing to the collapse in the supply. It may also be mentioned that special or rare forms of established plants in flower fetch from two to five, and even ten guineas each. Furthermore, about three per cent. of the plants obtained in the Pacho region consist of peculiar or unique varietal forms. The anticipation of such forthcoming novelties enhances the enthusiasm with which Orchid cultivators are inspired.

I have been engaged in the Odontoglossum crispum business during several years. At present, and until the spring of next year, all the plants of this Orchid—the famous forms growing on one hundred square miles of mountains—are under my exclusive right and privilege. The number of plants available on this mountain tract may be estimated to comprise more than one-third of all that now remain of the famous forms in a state of nature.

A few weeks ago I had the pleasure to forward forty plants of this Orchid to the Jamaica Botanic Gardens for cultivation at the Cinchona plantation. Having resided ten years at that plantation, which was established under my supervision, I am well acquainted with the climatic conditions of the Blue Mountains of Jamaica. The temperature at the Cinchona plantation between 4,000 and 6,000 feet exactly coincides with temperature at from 6,000 to 8,000 feet where O. crispum grows (latitude accounts for the difference of temperature equivalent to 2,000 feet). The wet seasons and the dry similar seasons are exactly on the Blue Mountains and on these Cordilleras.

From the upper limit of Coffee cultivation in Jamaica, about 4,500 feet, up to 7,000 feet, there is a very considerable extent of land under forest—a region comparable in extent with the Pacho region. It is impossible to conceive a more eligible tract for the naturalisation of this Orchid than is afforded between 4,500 and 7,000 feet in Jamaica. The way in which this enterprise—the naturalisation of this Orchid on the Blue Mountains—could be best accomplished would be to establish groups of the Orchid at intervals of probably a mile in the forest. Healthy plants tied to the trunks and branches of trees would require no further care. The majority of the plants would flower in about a year. After flowering seeds mature in a few months. Thus within a couple of years myriads of seeds, by reason of their buoyancy, would be dispersed over the forest. And it may be confidently predicted that in the course of ten years scores of thousands of plants would be naturalised and fit for export annually.

This Orchid thrives on the Cinchona trees, hence some hundreds of it might be established at the Cinchona plantation. Wider scope is afforded for cross fertilisation when a considerable number of plants are under treatment, *i.e.*, large groups embracing varied forms. It would also prove advantageous to grow a small percentage of a few closely allied species of Odontoglossum in order to induce hybridisation. Thus the Cinchona plantation alone, on the trees and on the rocks, would become a nucleus of production.

It has been mentioned that some 25 per cent. (sometimes far more) of this Orchid exported from Colombia perish in transit to Europe. The plants are received from the peon collectors, at a height of 7,000 feet above the sea level. The plants are then packed in cases, carried on mules' or bullocks' backs two days over a lofty, bleak and dreary ridge of the Andes, 11,500 feet; then fifty miles, partly in carts and partly in short railways, over the great savannah of Bogota; then four days on mules to the river Magdalena; then about a week down that river to Savanilla. Thus a severe ordeal, by reason of the violent change of temperature and the time occupied. There could be practically no loss by exporting from Jamaica, and the expenses attendant upon transit from Jamaica would be comparatively light.

It may not be amiss to refer to a notable example of naturalisation furnished by Jamaica,* by which that island has been enriched to the extent of millions of money, and this by spontaneous production—*i.e.*, logwood.

* The nun Orchid (Phaius grandifolius) is said to have been introduced by Mr. Wiles, whilst in charge of the Botanic Garden at Gordon Town, and it is now very abundant on the higher lands of the interior.—ED. *Bulletin*.

## MORMODES LUXATUM EBURNEUM.

OUR present figure represents the remarkable and handsome Mormodes luxatum eburneum, and is reproduced from a photograph kindly sent by A. W. Wills, Esq., Claregate, Wylde Green, Birmingham. A note from Mr. Wills states that "the length of the inflorescence is 13½ inches, its greatest breadth 8 inches, the number of flowers being 23. This species, one of the most beautiful of Orchids, has the reputation of being difficult to flower.

Fig. 4. MORMODES LUXATUM EBURNEUM.

My record, however, does not justify this opinion, being as follows:—bloomed 1891, 1892, and 1893; rested 1894; bloomed 1895 and 1896."

As to culture, Mr. Wills adds that no special treatment is adopted. The plants are brought into a warmer house along with Dendrobiums as soon as new growths show, and kept there until flower-spikes are well developed.

They are then removed to a Cattleya house for the rest of the year, and kept near the glass, being sparingly watered from the time the growth is made up. This treatment is suitable for all the members of the Catasetum group. Mr. Wills must be congratulated on his success with this striking plant, as in so many cases they gradually deteriorate and die—evidently the result of improper treatment.

The photograph was taken on the plant, which was simply propped in such a way as to bring the drooping raceme parallel with the camera front, the rest of the plant being omitted. The figure shows the toothed lip, and in one or two flowers the curiously-twisted column, both these organs being twisted to one side, and giving to the flower its contorted appearance. It also shows the right and left handed twist of the flowers on the two sides of the spike, which is another feature of this remarkable genus.

Mormodes luxatum was originally described by Dr. Lindley, in 1842, from a specimen which flowered in the collection of G. Barker, Esq., of Birmingham (*Bot. Reg.*, XXVIII., *Misc.*, p. 60). It had been sent home from Mexico by his collector, Ross, who, when in the neighbourhood of Valladolid, had some masses brought to him reported to be a plant of grea beauty. A year later it was figured in the same work (XXIX., t. 33). I was described as having pale lemon-yellow, fleshy, rather globular flowers, of nearly three inches in diameter, which were deliciously fragrant, but so distorted by the dislocation of parts that it would be difficult to ascertain their real nature were it not for the lip; a remark not altogether unwarranted, as our figure shows. Indeed, the generic name is taken from *mormo*, a goblin, in allusion to the strange appearance of the flowers.

For many years it remained very rare, for in 1878 Reichenbach, in recording a majestic peduncle, nearly three feet long, with twenty-five flowers, in the collection of Sir Trevor Lawrence, Bart., at Burford, Dorking, remarked that he had only once before seen it alive, when it flowered with Messrs. Backhouse, of York (*Gard. Chron.*, 1878, X., p. 396). Sir Trevor Lawrence spoke of it as "really a grand plant—stately in flower and foliage, delicate in its pure ivory tint and in its scent, and quaint in its twisted bell-shaped lip. To my mind it possesses many varied beauties, enough of them to captivate all tastes." It appears to have been the variety eburneum, Rchb. f., which was figured in 1882 from the collection of Dr. Paterson, of the Bridge of Allan (*Gard. Chron.*, 1882, XVIII., pp. 144, 145, fig. 27). This variety also flowered at Kew in 1885, and a note (*Gard. Chron.* 1884, XXIV., p. 176), speaks of it as the female of a Catasetum belonging to the section Monachanthus, a remark obviously reproduced from Bentham (*Gen. Plant.*, III., p. 552), but which is altogether erroneous, for the plant has the characteristic twisted column and lip of Mormodes, with which it agrees in every other respect.

A second variety appeared in 1885, with Messrs. F. Sander & Co., St. Albans, differing from the preceding in having numerous small reddish spots on the inside of the sepals and petals. It was named var. punctatissimum (Rchb. f. in *Gard. Chron.*, 1885, XXIV., p. 134).

## CYPRIPEDIUM × SALLIERI.

A CURIOUS question has arisen as to the origin of Cypripedium × Sallieri. Williams, in his *Orchid-Growers' Manual* (ed. 7, page 297), says:—"This is said to be a cross between Cypripedium villosum and C. insigne, but we have seen a plant which flowered in Mr. Shuttleworth's nursery, which had been imported from Burma, and which proved to be exactly like this plant; moreover, we learn that Mr. Sallier disclaims any knowledge of this being a hybrid." A writer in the *Journal of Horticulture* (Jan. 7th, p. 11) apropos of "Hybrid Cypripediums," also remarks:—"In the second paragraph of my note on this subject, page 556 [where he had repeated the exploded fallacy that hybrid Cypripediums do not occur in a wild state], I should have made an exception in favour of C. Sallieri, as this plant certainly appears to be a natural hybrid between C. insigne and C. villosum. It has the dorsal sepal of the former, while the petals have the decided median line as seen in C. villosum, and also the shining brown tint peculiar to that species. C. Sallieri is named after a French gardener, who was supposed to have raised it by crossing these two species, but who, as a matter of fact, selected it from other plants of C. insigne, and sent it out as C. Sallieri. It has also been imported since by several Orchidists, and not long since I saw a specimen—a C. S. Hyeanum—that flowered from an importation of C. insigne. This exception, however, does not alter the fact that natural hybrids in the genus are few and far between."

This definite statement of the plant's origin I am unable to trace in its recorded history. It was first recorded in 1885, on the authority of M. Godefroy Lebeuf, as a presumed hybrid between C. villosum and C. insigne (Bergman in *Rev. Hort.*, 1885, p. 476), but without further record of its origin, and two years later M. Godefroy himself repeated the statement, adding that some dispute had arisen as to the origin of the plant; that those who had obtained it thought it to be simply a form of insigne, which it was not; and that a hybrid raised by Mr. J. C. Bowring, of Forest Farm, Windsor, between C. insigne and C. villosum, had flowered, and proved to be the same, thus confirming the supposed origin of C. × Sallieri (*Orchidophile*, 1887, p. 33.) Three months afterwards the latter plant was figured in *Lindenia* (II., p. 75, t. 84). Veitch added the information that the original plant is a hybrid which appeared in the collection of Madame Fould, at the Château du Val, near St. Germain, France; by whom raised

is not known, but named in compliment to M. Sallier, Madame Fould's gardener (*Man. Orch.*, IV., p. 97). This original plant has since been figured (*Godefr. & Brown, Les Cypriped.*, t. 6), but nothing additional is recorded as to its history. Mr. Bowring's seedling, figured in *Lindenia* from the collection of M. Jules Hye, is more yellow than the original, and is called var. Hyeanum in gardens, and var. aureum by Williams (*Orch. Gr. Man*, p. 297).

How far the statements repeated in the first paragraph of this article are based upon reliable information must be left for the reader to judge—unless, indeed, the writers will explain—but the plant is undoubtedly a hybrid, and, so far as I can ascertain, the two parent species grow far apart, C. insigne in the Khasia hills and C. villosum in the Tenasserim district of Burma. Captain Grant omits C. insigne from his "Orchids of Burma," and follows Williams in considering C. × Sallieri to be a species, which it certainly is not. As to its having come from India with C. insigne, a curious side-light is thrown on the question by the plant called C. insigne pulchellum (*Orch. Rev.*, III., p. 105), which flowered in the collection of C. G. Roebling, Esq., Trenton, New Jersey. It is said to have been received by Mr. Förstermann in a consignment sent from the Khasia hills by his collector, Massmann, and to have then flowered for the first time. This, however, has proved to be a form of C. × Sallieri, yet individually different from either of the forms mentioned above. C. villosum, however, is not known from Khasia, so that the authenticity of the record seems open to question. What will be the ultimate explanation of these contradictory statements I cannot say. Perhaps some one can tell us whether this hybrid is cultivated in India, or whether it has also been raised there. Some of the records are certainly incorrect, and I have a strong suspicion that all which attribute the origin of C. × Sallieri to anything but artificial hybridisation have no foundation in fact.

R. A. R.

## CYPRIPEDIUM × DAUTHIERI SPORT.

FURTHER information about the sportive character of Cypripedium × Dauthieri is recorded (*Gard. Chron.*, Jan. 23rd, p. 62). There is a plant in the establishment of Messrs. F. Sander & Co., St. Albans, which in some years produces flowers of the usual character, while in others they are smaller in size, thinner in texture, pale in colour, indeed quite free frem the rich colouring of the nerves in the dorsal sepal. This year the plant has produced one of these degenerate flowers at the same time as the normal ones, and it appears that the normal flowers remain in perfection longer than the others. The vagaries of this Cypripedium have been fully recorded in our pages.

# ORCHIDS ABROAD AND AT HOME.

Notes of a Lecture delivered before the Members of the Kew Gardeners' Mutual Improvement Society on December 7th, 1896, by Mr. R. A. Rolfe.

*(Continued from page 15.)*

I HAVE already pointed out the varied climatic conditions under which Orchids occur in a wild state, and, besides these, there are some local peculiarities which must be taken into consideration. It is extremely useful to know whether any particular plant grows in what may be called a comparatively equable climate, or one where the difference between the seasons is very pronounced, and, fortunately, plants themselves afford some indication of this. Such plants as Bolleas and Pescatoreas, Masdevallias, or Phalænopses, which have nothing in the way of fleshy pseudobulbs, do not come from extreme climates, as do the deciduous Dendrobiums, and the Catasetum group. In temperate regions the difference between the seasons largely resolves itself into one of varying degrees of temperature, and the period of rest, or cessation of vegetative activity, corresponds to the cooler part of the year, but in warmer climates rainfall is of more importance, and plants usually grow during the wet season and rest during the dry, though the temperature of the latter may be the greater. Some climates are intermediate, and the periods of rest and activity are influenced both by temperature and rainfall. These factors should all be borne in mind by the cultivator.

The amount of light and shade is also a matter of great importance. Some plants will only grow in partial shade, others like all the sunlight possible, and there is a great diversity between various Orchids in this respect. Altitude, especially in its influence upon temperature and climate generally, has already been touched upon. The question of food supply we will consider presently.

We have now seen a little of the varied conditions under which Orchids grow, and may next consider how the cultivator attempts to meet their requirements. First, with regard to temperature. In any establishment where a general collection is grown there will be a Warm house or Stove, often called the East Indian house, for the accommodation of tropical lowland species; a Cool house for Odontoglossums, Masdevallias, and other alpine Orchids which grow in temperate climates; and at least one Intermediate house for plants whose requirements fall somewhere between these extremes. Generally speaking, there will be two or three houses of the latter class—the Cattleya house, Mexican house, and Intermediate house proper. In larger establishments there may be two or more houses of these different types, as the Dendrobium house, the Phalænopsis house, &c. And

the facilities for the proper cultivation of a large general collection may be still further increased by moving certain plants from house to house during the growing and resting seasons. But however great the facilities the cultivator may have at hand, he can hardly be as well equipped as Nature herself, and certain plants will refuse to thrive, or even to grow, in consequence.

There are other considerations besides temperature and climate generally, one of the most important being the question of food supply, and this opens up a wide field of inquiry, but in every case of failure the cultivator may feel certain that Nature has a lesson for him if he would, or could, only learn it. Many Orchids are not very plastic in constitution, and will not succeed under almost any kind of treatment. Even in a wild state some of them grow under tolerably uniform conditions, and this arises not so much from a lack of the means of dispersal as from inelasticity of constitution, or a want of the power to hold their own except under the rather limited conditions to which they have become accustomed. If the cultivator supplies these conditions they do well, otherwise he regards them as intractable subjects.

One curious thing about some of these intractable subjects is that they will sometimes do well in one garden or position and badly in another, and yet no one seems able to find out what condition is present in the one case and wanting in the other. Were this known it would be possible to guard against failure by supplying the essential conditions. The beautiful Disa grandiflora affords an excellent example of this. It grows with some people like a weed, but with others it will not succeed, treat it as they will. What can be the cause of this? Is it a question of soil, situation, humidity, temperature, impurities in the atmosphere, or what? This would form an excellent subject for discussion, as everyone would like to grow it well, and some are said to treat it like "ordinary geraniums," and with complete success. It is said to grow at 1,100 to 3,300 feet elevation on Table Mountain, by the sides of streams and rivulets, which frequently become dry in the summer.

Vanda cœrulea is often considered intractable, but I believe this arises from wrong—and by this I mean unnatural—treatment. It grows where there is plenty of heat in summer, but a low temperature and even frost in winter; and the lesson I should learn from this is to put it in cool quarters for the winter, so that it can rest. Those who treat it thus succeed best with it. Keeping it in a state of vegetative activity in the East Indian house all the winter is, I believe, neither natural nor wise. All Vandas cannot be treated alike any more than some other genera.

Phalænopses are often considered intractable, yet some people grow them well with no special trouble. Some say that all depends on the house, and

point to a celebrated little house belonging to Sir Frederick Wigan, at Clare Lawn, East Sheen, where they always succeed. But the nature of the house is a very important matter, and houses often differ considerably in their arrangements for a due supply of light, heat, and moisture; and faults of construction are not so easily remedied as faults in the nature of the potting materials.

Bolleas and Pescatoreas are interesting and beautiful Orchids, and many people have tried to grow them, but with little success. It has been remarked that they will do well for a time, and then suddenly go back, no one knows why. One day I was at Messrs. B. S. Williams and Sons' Nursery at Holloway, and found several plants in a rather close propagating house, and enquiring about them, learnt that they had been there for many years, and kept growing and flowering, pieces being taken off for sale. Messrs. Sander also grow them well in a rather warm moist house. This is rational treatment. They grow wild in rather moist shady woods at a moderate elevation on the Andes, and, having no pseudobulbs, must not be dried. In fact, they seem to keep growing and producing occasional flowers almost throughout the year. If treated differently they become intractable. Examples might be multiplied, but these will suffice to illustrate my meaning.

How little will sometimes suffice to upset the constitution of an Orchid is illustrated by an example in the propagating pits at the present time. It is a branch of a tree sent home from the Kilimanjaro district with two Angræcums growing on it—A. bilobum var. Kirkii, and a small leafless species, which I have described as A. Smithii. Since coming home, the former has increased in size, and is flourishing, but the latter is decreasing, and, unless it alters, will soon die. It may be asked how much nearer to natural conditions one can get than this, where the plants have not even been removed from the branch; but against this I would urge that the temperature, light, amount of humidity, seasons, and even food supply may be completely different from what they were at home. The former plant looked like a seedling, which may account for its improvement, but the latter is evidently unhappy in its new conditions, and its being leafless may partly account for its smaller power to cope with new conditions. No two plants are exactly alike in constitution, and hence a change may affect them quite differently. In the case of two plants growing together, one might be under ideal conditions--*i.e.*, those under which it attained its maximum development—and the other not. A change would injure the former, but might even benefit the latter, if in the right direction.

*(To be continued.)*

## CALENDAR OF OPERATIONS FOR FEBRUARY.

By W. H. YOUNG, Clare Lawn, East Sheen.

THE month of February is the advent of renewed life in the Orchid department, the lengthening days, and consequently more powerful and beneficial sunlight, awakening the dormant life in a host of our favourites. However, it is not advisable to raise the temperatures by artificial aid yet, but let them remain as heretofore, viz.:—

| | | |
|---|---|---|
| East Indian, Stove, or Warm house - | Day 65° | Night 60°. |
| Cattleya and Mexican house - - - - | ,, 60°-65° | ,, 58°. |
| Intermediate house - - - - - | ,, 58° | ,, 55°. |
| Cool house - - - - - - | ,, 55° | ,, 50°. |

It should be thoroughly understood, and a thing to be always aimed at, that the lowest readings should be those taken in the morning before the fires have been started for the day. The day temperatures should be kept up to within a degree or so of their maximum until banking-up time at night, allowing the temperature to recede gradually until the morning.

With the return of life in the plants, potting, top-dressing, mossing, and other attendant operations will soon be in full swing, though due regard should be taken of the fact that almost as great an evil will result through performing the operation too soon as would follow neglecting to do it at the right time, and therefore when doing any certain class of plants leave those whose condition is not suitable to operate upon until such time as they are fit. Occupants of the East Indian house will first claim our attention, for it is here that the subjects first show signs of renewed activity, and perhaps the first to be taken in hand should be certain of the Selenipediums. These are, more or less, always in a state of growth, yet just now it becomes accentuated, and it is also the best time to disturb them at the root if necessary. S. × Sedeni, × grande, × calurum, longifolium, Roezlii, and others of this section of the "slipper" family may be repotted now. These plants require plenty of root-room, and a more lasting compost than the true Cypripediums, and to this end a small quantity of good fibrous loam may be added with advantage to the peat and moss. Of course, a good supply of drainage is essential. When potting rare hybrids of the section do not throw away any old back growth that may be cut off, as it will almost certainly produce a growth if kept and potted in a small receptacle. S. Sargentianum, one of Messrs. Sander's more recent introductions, is a noble and striking plant even when not in bloom, is a good grower, and produces tall erect spikes five feet or more in length. The blooms have the general appearance and colour of S. longifolium, excepting in the petals, which are almost crimson. A point worth noting in connection with this is that it does not relish water in its growths. The others are not very

particular in this respect, excepting S. caudatum and its varieties, and Schlimii, and in watering these it is therefore advisable not to pour it over the plant, especially during the winter or in dull weather. The first of these grows best in an intermediate temperature, and the last in a cool one.

Coming into flower in the Warm house is the grand and noble Cypripedium Rothschildianum, an Orchid of rare decorative habit when not in bloom, but when its stout dark spikes and strikingly handsome flowers are added, few, if any, of the "slipper" family can compare with it. This species is one that should occasionally be allowed to become moderately dry at the root; at least, we find it advantageous not to saturate the ball of compost continually, as is the case with others of this family, and water should never lodge in the growths, for if it does the least harm it does is to cause disfigurement of the leaves.

Towards the end of the month preparations for renewing the moss about such plants as Vanda Bensonæ, Denisoniana, lamellata, most of the warm growing Aërides, and the Saccolabiums should be made, leaving S. cœleste awhile longer at rest, until new roots appear. The plants, mostly growing in baskets and teakwood cylinders, should for a considerable time previously have no water given them, so that the old moss becomes dry, and thus is more readily removed. The new moss should be freed from all weeds, leaves, and other extraneous matter, and placed in a position to get warm before using. All the old moss, and as many of the old crocks as are detachable, should be picked out, and if all the old material cannot be removed with the aid of a stick the syringe should be used, allowing the receptable to drain and dry a little before proceeding further with the operation. The baskets or cylinders should be nearly filled with clean crocks, the moss when completed being about an inch thick. If the latter be good, it may be possible whilst placing it on the basket to so arrange that the largest proportion of heads are upwards, so that in time it will grow and form a neat and even surface. If the moss is long it is better to chop it, for greater convenience in working and for appearance when done, but if this is necessary, of course, one cannot get the "heads" to come uppermost, but given ordinary attention, and by using rain water only, it will soon grow and appear as well as any other. Any plants that have grown at all "leggy" owing to the loss of their lower leaves may, in many instances, be lowered without bodily removal, by the simple act of cutting away a few inches of the stem at the base and lowering the plant. Possibly a few roots will crack, but a little extra care will reduce this to a minimum. Those that need lowering, but yet cannot be done without bodily removal, had better be left until a little later in the year. To economise space and to prevent the roots of different plants interlacing they should be gone over occasionally, and spreading roots that are likely to become attached to a

foreign basket should be tied back. It is scarcely necessary to add that great care must be exercised in doing this. For a considerable time after the plants have been done up, water must be applied with great care and discretion ; those that are in cylinders, being arranged on a stage, will need very little applied direct, as almost sufficient will be afforded by damping among and around the outsides, sprinkling the moss occasionally with water from a can with a fine rose to prevent it becoming too dry. Those in baskets hanging up should not be immersed in water sufficiently to wet the whole body of moss, but just deep enough to soak the crocks and wet the base of the moss, capillary attraction doing the rest. The young and succulent roots of these plants are often destroyed by cockroaches and crickets, and to keep these depredators in check a quantity of phosphor paste should be *laid about* at night amongst the plants and other parts of the house.

Vanda Amesiana has just gone out of flower, and to give it a little rest it should be one of the last to be done up. This and V. Kimballiana are two difficult subjects to deal with, and no general unanimity exists as to whether they should be grown cool, intermediate, or warm, the advocates of either temperature having met with a certain amount of success whilst growing them under those conditions. As far as we here are concerned, our treatment inclines to the latter ; the only thing I can recommend is that if success is not obtained under cool treatment, try a warmer one, or *vice versa*. Very little water is needed by these two, except in the middle of the growing season.

The grand old Stauropsis (Vanda) gigantea is now in flower here, an event of annual occurrence, though it is not everyone's experience with this plant. It is grown amongst the Dendrobes in the stove, the bright sunlight it is subjected to during the summer probably being conducive to this happy event. It may have fresh moss given it when the other distichous-leaved Orchids are done ; also Angræcum citratum, pallidum, pellucidum, Sanderianum, &c. The first one is now about to open its sweet-scented flowers, a process which greatly exhausts this delightful Orchid. However, we have plants here over ten years old, but I am afraid they will soon go to another place. As a rule, Angræcums may be given water more frequently than Aërides and such-like plants during the winter, but to a great extent the quantity required will depend on the prevailing conditions of the house and the position they occupy in it.

After having enjoyed a long rest in an Intermediate house, plants of the graceful flowering Platyclinis (Dendrochilum) glumacea should, if not already done, be removed to a light and warm position in the East Indian house, as the young growths enclosing the thread-like spikes are fast pushing up. Liberal supplies of water should be given, but not overhead yet awhile. If

any re-potting or surfacing be needed, it should be done immediately after flowering; the compost used should consist of two parts fibrous peat to one of fibrous loam, with a little chopped sphagnum moss, and sufficient sand or finely-broken crocks to render the whole porous. Pans of moderate depth, and of sufficient width to allow of two seasons' growth being made without rendering it necessary to repot previous to that time, should be used, filling them about three-parts full with crocks, raising the plant in the centre a little, but keep the soil below the edge of the pot to admit of copious waterings. For some little time after repotting, water very sparingly until the fibre-like roots have taken a good hold of the new material, subsequently large and frequent doses will be necessary, and the leaves syringed daily in bright weather to prevent red-spider gaining a foothold. By-and-by, when the small bulbs have attained their full size, the plants should be taken back again to a more airy and cooler house.

To bring Miltonia Roezlii safely through the winter requires very careful and continual attention, for, although lovers of moisture and shade, they are apt to get too much of one or the other during this dull and damp season. They and the lovely hybrid M. × Bleuana, are now making steady growth in a moist, warm corner of the stove, and to ensure that the young growths do not become sickly and drawn, the plants are raised on pots to bring them near the glass; however, they should not be nearer than a foot, or they will derive harm from cold draughts rather than benefit from increased light. Keep the moisture-holding material on the stage well damped, but do not keep the plants in a continual saturated condition, and sponge the leaves frequently to keep them free from insect pests, and clean, so that they can perform their functions satisfactorily.

The lovely new Eulophiella Elizabethæ is now pushing out its purple-tinted flower-spikes, the growths being almost completed, and such being the case, the rooting material should not be kept quite so moist as hitherto. When I saw the first importation of this grand Orchid I hesitated in purchasing any, as its appearance led one to suppose that it would not be an easy-growing kind; however, on the second occasion of their being offered for sale, a small plant was bought, which after several failures in different composts and various temperatures, the right treatment was hit upon. Our plants are growing in a mixture of half peat and half fibrous loam, with a little chopped moss and finely broken crocks to keep the soil open. They are in well-drained pans, suspended from the roof of our Phalænopsis house, where they—for we have several now—produce leaves over three feet long. Possibly in a lighter position the growth would be more sturdy, but with the accommodation at our command we are justified in feeling satisfied with the result, when spikes bearing sixteen to twenty flowers are produced. [This is about the normal development in a wild state.—Ed.]

The magnificent and unique flowering Cœlogyne pandurata is with us a decided success; a plant that seven years ago was in a five-inch pan now covers a raft four feet long, and, better still, flowers annually. One year it produced three spikes carrying in the aggregate twenty-eight flowers. About every other year a new piece of raft has to be fixed on at the forward part, and if the back bulbs have lost their leaves a portion is taken off the rear end. In the first place it was simply laid on a raft and secured with wire, and then when a new growth, with its long, creeping rhizome, sent out roots, a few pieces of crock were laid on the raft, and a mixture of peat and moss in equal proportions was laid on these up to and level with the rhizome. Sometimes it is necessary to pull the latter down nearer the raft, so that a large body of material would not be required. All through the year copious draughts of water are given, though if at any particular time there is no growth in progress, it is kept a little drier for the time being. The raft is standing on an open central stage, on the shady side of the Erst Indian house. Its time of flowering is usually some time during this month or the next. Instead of cutting the spike, when required, slip it out of the young growth, in the same way that snowdrops or bluebells are gathered.

Very little can be added about the Cattleya house other than was said last month; however, there is one pretty and rarely seen Orchid pushing up its flower-spikes, viz., Lælia flava. This is a very dry growing plant, which should be grown on or in something with very little material about its roots to hold moisture longer than is good for its well-being. A plant here with a mere scrap of peat and moss is attached to a raft, and thrives very well hung up near the glass. Aërides Fieldingii, crassifolium, and Warneri maintain a better state of health and flower more freely in this house than in a warmer atmosphere; the temperature being lower during the winter, the plants can be kept dry longer without fear of the leaves shrivelling or turning yellow. The last named is a very shy one to bloom, but our plants are now pushing out their flower-spikes. They will not commence to root as early as those in the Warm house, and hence will not need re-mossing so soon. In flower in the Intermediate house is the new Trichopilia brevis, a wonderful and exceedingly pretty thing that thrives under the same conditions as T. tortilis, viz., plenty of water during the growing season, and a moderate supply when at rest. It is also commencing to grow, and presently, when root action is visible, a little fresh peat and moss may be given if required. Plants of this genus do not care to be disturbed at the root much, and as they are mostly of a compact growing nature, repotting is seldom necessary, if the drainage can be kept in good order.

Bletia hyacinthina is an excellent cool Orchid, it having the rare attribute of possessing fresh and green foliage when the plant is in bloom,

without any of the old scarred remains of other generations, it being deciduous. Those having plants should immediately take them in hand, and top-dress or repot, as required. Well-drained pots and a compost of two parts of loam to one of peat, with a little leaf mould and sand, should be used, potting them in the same way as one would a clump of lily-of-the-valley. When completed, stand in a cool place on a moist bottom, and water sparingly until such time as it may be assumed that the new roots have penetrated the new material. The plants may be stood outside the whole of the summer, taking care to give water when wanted, and as soon as frosts are imminent take the pots in and lay them under a stage in a Cool house.

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THE first meeting of the year was held at the Drill Hall, James Street, Westminster, on January 12th, when there was a very good display of Orchids, which, however, had to be examined by gas-light, owing to the presence of a thick dark fog during the greater part of the day.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), sent a small group of very fine Orchids, including a splendid plant of Cypripedium × Leeanum superbum with over twenty flowers, a well-bloomed C. insigne Sanderianum, C. × Madame de Curte, the handsome Phaio-calanthe × Sedeni, the brilliant Calanthe × Baron Schröder, a pale yellow form of Odontoglossum crispum, and the prettily-spotted O. c. Evelina. A Silver Flora Medal was given to Odontoglossum crispum Stevensii, a finely-grown plant with a spike of fifteen large and handsomely-blotched flowers, and an Award of Merit to Cattleya Loddigesii superba, a large and handsome form.

The Hon. Walter Rothschild, Tring Park (gr. Mr. Hill), received an Award of Merit for a very striking Peruvian Mormodes called M. badium (Rolfe) var. luteum, bearing two spikes of deep yellow flowers, the type being of a red-purple shade. He also received a Botanical Certificate for Bulbophyllum Dayanum, a remarkable species with ciliate sepals, which we have only met with once or twice before during recent years.

F. A. Bevan, Esq., Trent Park, Barnet (gr. Mr. Lees), received a Silver Flora Medal for a very fine group of Odontoglossums, including some splendid examples of O. Pescatorei, and a large and well-flowered plant of Cypripedium insigne in the centre.

H. Greenwood, Esq., Highfield, Haslingden, Lancashire, received an Award of Merit for a handsome hybrid called Cypripedium × Lilian Greenwood, derived from C. bellatulum ♀ and C. barbatum Warneri ♂, and thus a variety of C. × Richmanii.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), showed a fine dark form of Lælia anceps called "Mrs. De B. Crawshay."

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), sent the handsome Lælia anceps Dawsoni, Dendrobium × Cybele, D. × Schneiderianum, Odontoglossum mirandum, Cypripedium × Leeanum Masereelianum, a fine C. × Germinyanum, and a peculiar albino of Cypripedium insigne, with pale green scapes and a yellow and white flower without any trace of markings.

C. L. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), sent Lælio-cattleya × Regina (C. intermedia ♀ × L.-c. × elegans Turneri ♂), L.-c. × Venus (L.-c. × elegans Turneri ♀ × C. Percivaliana ♂), Lælia × Exquisite (Perrinii ♀ × Dayana ♂), L. × amœna (Dayana ♀ × anceps ♂), and L. × Lucy Ingram (purpurata ♀ × Perrinii ♂), the latter being a handsome form, to which an Award of Merit was given. It is most like the pollen parent, but shows the L. purpurata character in the lip.

John Stark, Esq., Croston Towers, Alderley Edge, Cheshire (gr. Mr. Marshall), sent a good form of Cattleya Trianæ with petals blotched much as in C. T. Backhouseana.

Reginald Young, Esq., Fringilla, Sefton Park, Liverpool (gr. Mr. Poyntz), sent the beautiful Lycaste Skinneri armeniaca, figured at page 73 of our second volume.

Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, staged a very fine group, to which a Silver Flora Medal was given. It contained Lælio-cattleya × Ingramii, several fine L.-c. × Pallas, Cattleya × leucoglossa, C. × Miranda, a pretty rose-pink hybrid from C. amethystoglossa ♀ and C. Trianæ ♂, Epidendrum × Endresio-Wallisii and E. × elegantulum, the remarkable orange-red Dendrobium subclausum and D. glomeratum Stenoglottis longifolia, Oncidium dichromum and O. varicosum Rogersii, Lycaste Skinneri and L. S. alba, some fine varieties of Cypripedium × Leeanum, including one called Prospero, derived from C. Spicerianum ♀ and C. insigne Sanderianum ♂, C. × Niobe, C. Harrisianum superbum, C. × Euryades, C. × Ianthe, C. × Œnone, &c.

Messrs. F. Sander & Co., St. Albans, staged a fine group, including the rare Miltonia Endresii, Odontoglossum Harryanum and O. nævium, Lycaste Skinneri and a good form of L. macrophylla, Oncidium pulchellum, four plants of Phaio-calanthe × Arnoldiæ, some good forms of Lælia anceps, Cattleya × Trianæ, Paphinia Randii, Spiranthes colorata var. maculata, Dendrobium × Cassiope, D. × dulce Oakwood var., a pretty form of Phalænopsis Stuartiana, Cypripedium × Mrs. D. Solomon (C. × Lathamianum aureum ♀ × C. Spicerianum ♂), and others. The rare Dendrobium speciosum Bancroftianum (Rchb. f.) received a Botanical Certificate.

Messrs. Hugh Low & Co., Upper Clapton, received a Silver Banksian Medal for a fine group, including Cattleya Eldorado, Angræcum sesquipedale, Phalænopsis × intermedia Brymeriana, Odontoglossum crispum and others, Cypripedium × Leeanum giganteum, C. × L. superbum, C. × Madame Georges Truffaut, and other fine things.

Messrs. Linden, L'Horticulture Internationale, Brussels, showed a pretty form of Odontoglossum crispum and two of Cypripedium × insigne, and Cochlioda × miniata, a supposed natural hybrid between C. vulcanica and C. Nœtzliana. A Cultural Commendation was given to Cochlioda vulcanica maxima, a large dark variety, and an Award of Merit to Cypripedium × Lebaudyanum (Haynaldianum ♀ × philippinense ♂), a handsome form, intermediate between the two parents.

M. Otto Froebel, Zurich, sent a form of Odontoglossum × Andersonianum with very few spots on the segments.

## ODONTOGLOSSUM PESCATOREI: ARE VARIETIES PERMANENT?

I SEND you a spray of Odontoglossum Pescatorei with spotted flowers, which is especially interesting, as I believe it is an example of a plant of a choice variety occasionally showing a reversion to the ordinary type. I bought it at Messrs. Protheroe & Morris's Rooms last year, and previous to its sale Mr. Morris announced that it was a plant sold at the Owens' sale as a specially fine spotted variety, named Vervaetiæ, for thirty or forty guineas, but had been returned by the buyers, on the ground that they had flowered it and proved it to be merely an ordinary variety *without spots*. If the foregoing be correct, the present flower would seem to be a somewhat forcible argument against the views expressed on page 5 of your January number, and it is evident that a flower of a choice variety *cannot* "be relied upon to be repeated year after year."

Yours faithfully,

C. WILSON POTTER.

Croydon.

[The inflorescence sent has ten flowers, measuring 2 inches across their broadest diameter, the sepals having one roundish red-purple spot above the middle, 2—3 lin. across, and the lip two to four smaller ones, more or less suffused, immediately in front of the crest. The petals are white, except that four have a single small spot, while, conversely, six sepals have each lost the spot, while one has two spots. Our record of the price fetched by the variety Vervaetiæ at the Selwood sale (*supra*, III., p. 206) is eleven guineas. We would ask Mr. Potter to note the behaviour of this plant in future years, as it is important that the questions involved should be set at

rest. We can understand the person who bought it as a choice spotted variety being disappointed in it, but we have strong suspicions that it has never been very different from what it is now. Good or bad culture will make a little difference, and the amount of spotting is subject to slight variation, but we do not know of a single instance of such reversion as this note suggests. Will those who have definite information to the contrary communicate the facts.—ED.]

## ORCHID PORTRAITS.

BULBOPHYLLUM ERICSSONI, Kränzl.—*Gard. Chron.*, Jan. 23, p. 61, fig. 16.

CATTLEYA × PRINCE OF WALES.—*Journ. of Hort.*, Jan. 7, p. 11, fig. 5.

CIRRHOPUTALUM MEDUSÆ, Lindl.—*Gard. Chron.*, Jan. 9, p. 25, fig. 6.

CYPRIPEDIUM LAWRENCEANUM HYEANUM.—*Gard. Chron.*, Jan. 16, pp. 36, 37, fig. 8.

DENDROBIUM CHRYSANTHUM.—*Gard. World*, Jan. 23, p. 46, with fig.

DISA PULCHRA, Sond.—*Gard. Chron.*, Dec. 26, pp. 778, 785, fig. 141.

LÆLIA PRÆSTANS ALBA, E. ASHWORTH.—*Gard. Chron.*, Jan. 2, pp. 1, 11, fig. 3.—ASHWORTH'S VAR.—*Journ. of Hort.*, Jan. 14, p. 27, fig.

LÆLIO-CATTLEYA × ROSALIND.—*Gard. Chron.*, Jan. 2, pp. 2, 3, fig. 1; *Journ. of Hort.*, Jan. 21, pp. 54, 55, fig. 16.

MILTONIA SPECTABILIS MORELIANA, DULCOTE VAR. — *Gard. Mag.*, Jan. 16, p. 37, with fig.

SELENIPEDIUM BOISSIERIANUM, Rchb. f.—*Gard. Chron.*, Jan. 23, pp. 54, 55, fig. 13, 14.

STANHOPEA WARDII.—*Garden*, Jan. 9, p. 28, with fig.

VANDA KIMBALLIANA, Rchb. f.—*Gartenflora*, 1896, pp. 337, 338, t. 1428, fig. A and fig. 58.—VAR. LACKNERÆ, Kranzl.—*l.c.*, p. 339, t. 1428, fig. B.

## CORRESPONDENCE, &c.

H. B., Reigate. Lycaste mesochlæna, whose history is given at page 72 of our first volume.

R. M. G., Minneapolis. Epidendrum ochraceum.

W. V., Chiselhurst, 1, The hybrid from Cypripedium Spicerianum × C. barbatum Warneri is a form of Cypripedium × Eyermanianum; 2, of which you have no record, is doubtful, and may be from a cross between C. × Harrisianum and C. × Crossianum, as it seems possible to trace C. villosum, venustum, insigne, and possibly barbatum in it. It may be possible to judge better when it flowers again.

O. O. W., Bury. Cypripedium virens, not C. nigritum; see note at vol. iv., p. 206. The three seedlings can be iudged better when they flower again.

# Orchids! Orchids!

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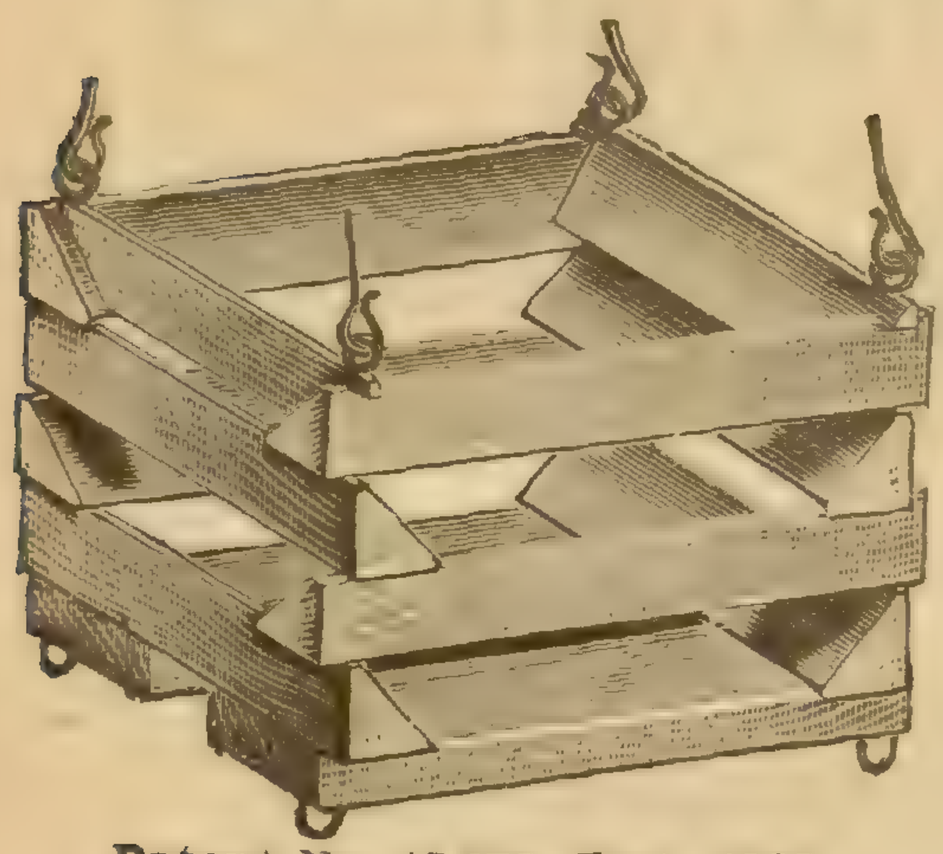

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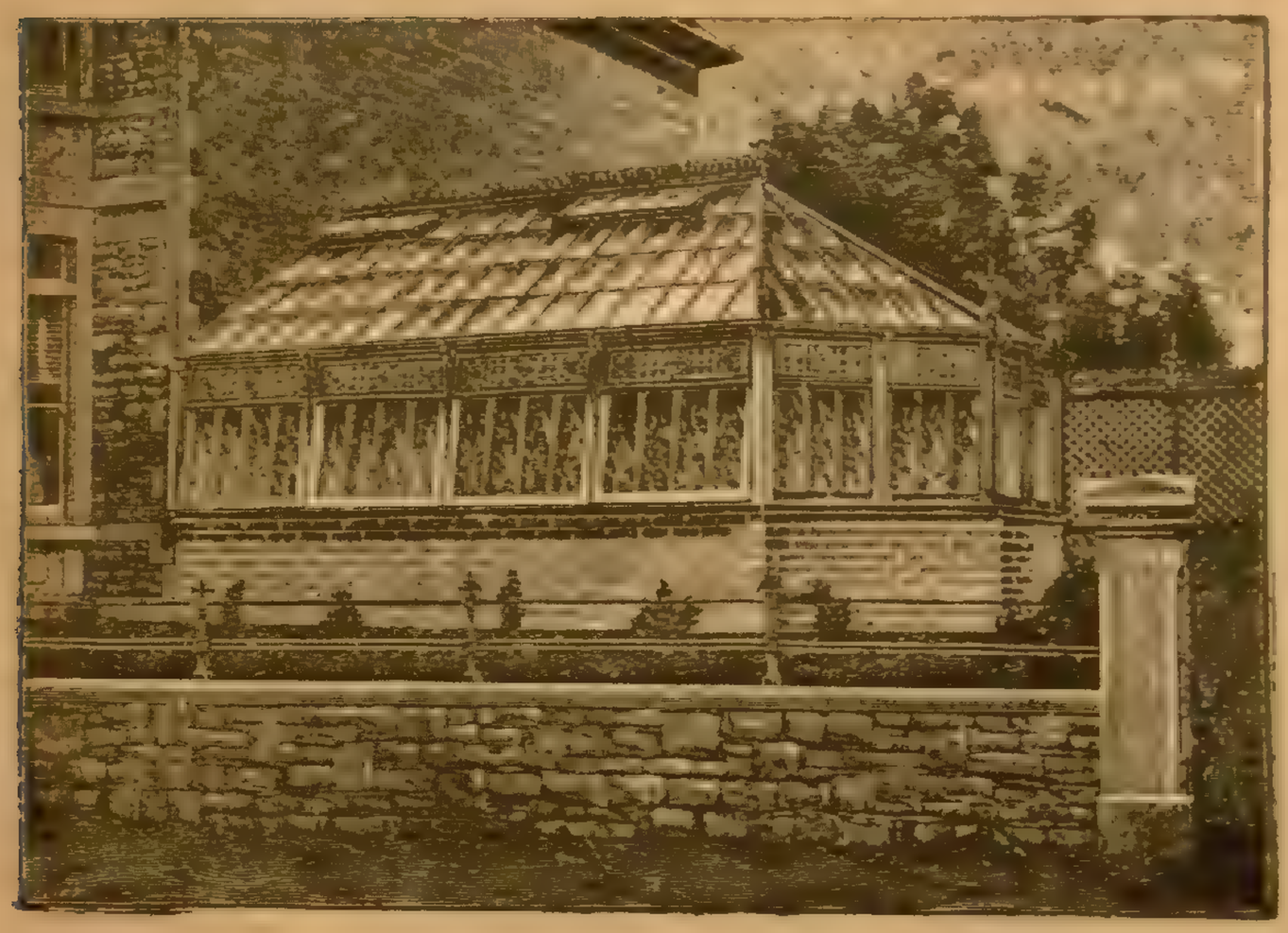

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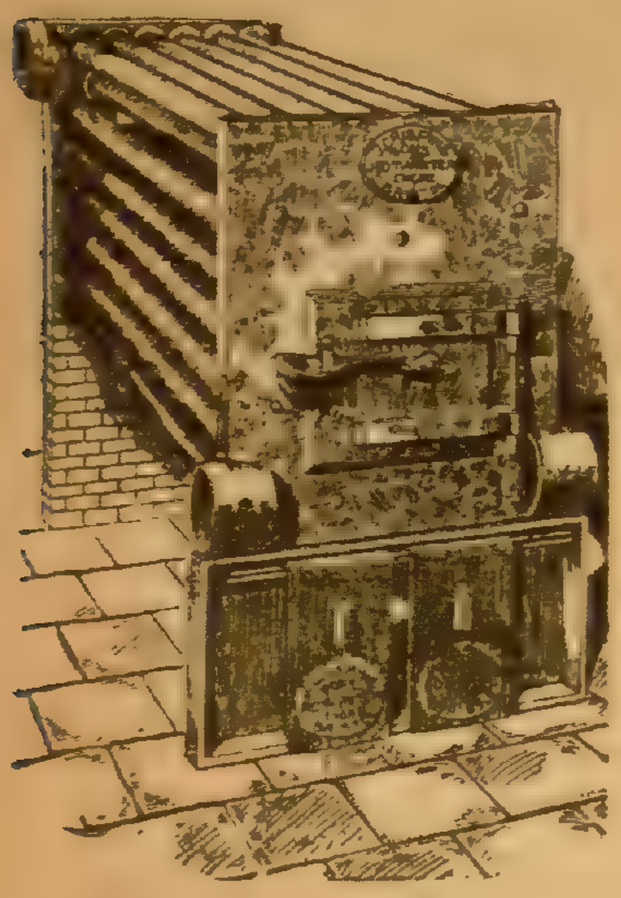

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VOL. V.] MARCH, 1897. [No. 51.

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An Illustrated Monthly Journal,

*DEVOTED TO ORCHIDOLOGY.*

Contents.


| | PAGE |
|---|---|
| Calendar of Operations for March ... | 87 |
| Cattleya flowering from rhizome ... | 76 |
| Cattleya Trianæ varieties ... ... | 71 |
| Correspondence, &c. ... ... ... | 96 |
| Cypripedium × Godefroyæ ... ... | 75 |
| Cypripedium Sanderæ ... ... ... | 85 |
| Dendrobium, hybrid ... ... ... | 76 |
| Dendrobium Wardianum ... ... | 95 |
| Dendrobiums in season ... ... | 85 |
| Dies Orchidianæ ... ... ... | 67 |
| Eulophiella Peetersiana ... ... | 67 |
| Hybrid Dendrobium ... ... ... | 76 |
| Hybrid Phragmipediums ... ... | 86 |
| Hybridist ... ... ... ... | 79 |
| Cattleya × Miranda ... ... | 80 |
| Dendrobium × Burberryanum ... | 80 |
| Phalænopsis × Hebe ... ... | 79 |
| Notes ... ... ... ... ... | 65 |
| Odontoglossum crispum ... ... | 73 |
| Odontoglossum crispum Imperator (Fig. 5) .. ... ... ... | 81 |
| Orchid Portraits ... ... ... | 96 |
| Orchids abroad and at home ... ... | 69 |
| Orchids at the Royal Horticultural Society ... ... ... ... | 92 |
| Orchids of 1896 ... ... ... | 77 |
| Orchid seedlings, the raising of ... | 82 |
| Phragmipediums, hybrid ... ... | 86 |
| Saccolabium Barbeyæ ... ... ... | 84 |


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# THE ORCHID REVIEW.

VOL. V.] *MARCH*, 1897. [No. 51.

## NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during March, on the 9th and 23rd respectively, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

Several beautiful hybrid Cypripediums have been sent by Messrs. James Veitch and Sons, Chelsea, showing their great value as decorative winter blooming plants, and the decided improvements which are gradually being effected. They are, C. × Tityus (C. Spicerianum ♀ × C. × œnantham ♂), C. × Minos (C. Spicerianum ♀ × C. × Arthurianum ♂), C. × Leeanum var. Prospero (C. Spicerianum ♀ × C. i. Sanderæ ♂), C. × Milo (C. insigne Chantini ♀ × C. × œnanthum superbum ♂), and C. × Euryades (C. × Leeanum ♀ × C. Boxallii ♂). This almost serves to indicate their character, so well combined are the features of their well-known parents. In C. × Minos, however, the characters of C. × Arthurianum are very marked, and in C. × Euryades those of C. Boxallii predominate, the petals and lip being very dark, and the dorsal sepal very heavily blotched. C. × Leeanum var. Prospero is an unusually light form, which shows that the influence of C. insigne Sanderæ has not been lost.

The beautiful Lælio-cattleya × Pallas, Epiphronitis × Veitchii, and Dendrobium Wardiano-japonicum, are also enclosed, each of them being valuable decorative plants at this season.

An exceptionally fine raceme of Dendrobium crassinode Barberianum with no less than five flowers, has been sent by Messrs. Hugh Low & Co., of Clapton, a number which we do not remember to have met with before.

and which, perhaps, indicates extreme vigour on the part of the plant. The flowers of this variety are very handsome, the apical third of the sepals and petals being deep rose-purple, and the apex of the lip darker than usual.

A very fine form of Cypripedium insigne has been sent from the collection of E. H. Woodall, Esq., of Scarborough. The flower is of excellent form and substance, the dorsal sepal nearly orbicular, and the petals unusully broad. It came out of one of the recent importations.

A fine flower of Cypripedium Victoria-Mariæ, comes from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, showing that it is quite distinct from C. Chamberlainianum, both in form and colour. The scape from which it was cut is $2\frac{1}{4}$ feet high, and will go on lengthening and flowering for some time to come, as there are many buds to follow. In the first flower which opened, the lip was entirely absent.

A good typical form of Lælia anceps is sent from the collection of John Falconer, Esq., St. Ann's, Lasswade, Midlothian. It was purchased from Messrs. John Cowan & Co., Liverpool, as L. anceps morada, a name which Mr. Falconer points out is not included in the list of varieties given at pp. 50—53 of our last volume. We had met with the name before, and Messrs. Cowan have informed us that it was applied to distinguish the coloured forms from the numerous white ones, "morada" being the Spanish word "dark."

A small clear yellow form of Cypripedium insigne has been sent from the collection of J. Gurney Fowler, Esq., S. Woodford, Essex. The dorsal sepal is only $1\frac{1}{4}$ inches across, and not very much larger than the lower one, but the colour is very good. It may not be fully developed, but at present we do not identify it with any of the known yellow forms.

We have received the programme of the Exposition Internationale de Bruxelles to be held at Tervueran during 1897. Prizes are offered for Orchids at meetings from May 9th to 12th, and July 21st to 25th. The classes include groups of 100, 50, 25 and 12 Orchids, both for Nurserymen and Amateurs, also for the best 25 arranged for effect; 20 Cattleyas and Lælias; 20 Odontoglossums; 20 Masdevallias; and 20 Vandas, Aërides and Saccolabiums; 25 and 15 Cypripediums, also the most remarkable hybrid ditto; the best 25 Odontoglossums of the same species; 10 Anœctochilus and allies; three new or rare Orchids, the most beautiful Orchid in flower; the most remarkable for merit or rarity; the most beautiful Orchid obtained from seed; and the most beautiful Lælio-cattleya.

Intending exhibitors should apply at once for particulars to the Secretary, M. Lubbers, Botanic Garden, Brussels.

There are also numerous prizes for Orchids at the Hamburg Horticultural Exhibition from May 1st to 7th, and August 27th to September 5th. Particulars may be obtained from the Committee.

## EULOPHIELLA PEETERSIANA.

A FEW plants of a remarkable Orchid received from Madagascar by M. A. A. Peters, of St. Gilles, Brussels, were recently offered for sale by Messrs. F. Sander & Co., St. Albans. M. Mocoris, the collector, describes it as a plant of absolutely incontestable beauty, the flower stems over a yard high, and bearing 20 to 25 flowers, which are $2\frac{3}{4}$ inches across, the sepals and petals violaceous, and the lip violet with a golden yellow spot at the base. The stem, which alone I have seen, reminds me of Grammatophyllum rather than of Eulophiella, and I should not be surprised to find that it belongs to some other genus, but this point must be left until flowers are forthcoming, either in a dried or living state. And here is a hint for M. Mocoris—and others whom it may concern. When he finds a remarkable Orchid of this kind, let him not content himself with a few words of description. If he cannot dry a specimen, he should at least put a flower or two in his pocket-book, folded in a piece of blotting paper, and send them home together with the plants. This would enable us to form a much better idea of the value of his discovery.

R. A. R.

## DIES ORCHIDIANÆ.

MY remarks about Cypripedium × Lilian Greenwood at page 41 have called forth the following note from Mr. Greenwood:—"When I exhibited Cypripedium × Lilian Greenwood on January 12th, I did not give the parentage, so it is hardly fair for 'Argus' to blame the Committee for allowing the name to pass. I bought the plant as a very small seedling in June, 1895, the parentage given being bellatulum × Leeanum superbum, but I am not sure that this is correct."—HY. GREENWOOD, Highfield, Haslingden, near Manchester.

---

I was aware from the contradictory records about this plant that the parentage was somewhat doubtful, yet I took the definite statement by "J. A." (see *Gard. Chron.*, Jan. 16, p. 35) as reliable. However, the members of the Orchid Committee could not have seen that note until afterwards, and in view of Mr. Greenwood's note I will excuse them—just this once.

If Mr. Greenwood will kindly send the Editor the next flower he has to spare, perhaps the doubtful point can be cleared up, and I hope the original record, will prove correct. Of course my remarks were intended to illustrate a general principle, and will remain after C. × Lilian Greenwood has, with J. A.'s permission, been withdrawn from the list given at page 41.

---

I note that Mr. A. Dean has some remarks to make on the R. H. S. awards to which I called attention at page 40. Speaking of the Orchid Committee he observes :—" I think it is not too much to say of the latter body that it is largely composed of pure enthusiasts, who are in their awards guided by no such severe considerations as animate members of other committees, and every trifling variation in form or colour or marking in any Orchid excites the greatest admiration ; hence the abundance of awards. Possibly the purposed subjecting all honoured flowers to the ordeal of the artist's brush—and it is hoped the work of illustrating these flowers will be performed with absolute accuracy—for presenting to the Committee facsimiles of previous exhibits, will tend somewhat to cool members' fervour in relation to minute divergencies henceforth." (*Journ. of Hort.*, Feb. 25, p. 163). I do not necessarily endorse the first part of these remarks, but having more than once had occasion to comment on the doings of this Committee, I was naturally glad to see that the Council of the R. H. S. had felt it necessary to call attention to the question of awards generally, and to indicate the desirability of some improvement.

---

Mr. Dean goes on to define the Award of Merit as a recognition of good average merit in the plant to which it is given, and nothing more ; consequently, nothing to boast of. He also remarks that it is no doubt often good-naturedly bestowed because it pleases some one and nobody is hurt. Now this is a little too bad. Surely we have not descended to that level. I have always recognised that the Committee do a great amount of good and useful work, and if I have sometimes had to take them to task it is chiefly because they did not always keep up to their own standard. They must see to it that this idea does not get about generally. And that definition of the Award of Merit, which I believe is generally considered as equivalent to the Second-class Certificate of some years ago. However, we have had a definition of the Botanical Certificate as an award given to indicate the opinion of the Committee that the plant on which it is bestowed is not worthy of commendation for cultural or decorative purposes (*vide supra*, IV., p. 198), and I remember once seeing a poor spike of Catasetum macrocarpum, I think it was, in a ginger-beer bottle (or was it a blacking jar ?) labelled Botanical Certificate. I hope no one was hurt. The Committee really must be a little more careful in future.

ARGUS.

# ORCHIDS ABROAD AND AT HOME

Notes of a Lecture delivered before the Members of the Kew Gardeners' Mutual Improvement Society on December 7th, 1896, by Mr. R. A. Rolfe.

*(Continued from page 55.)*

THE great diversity of habit seen among Orchids arises from adaptations to climatic peculiarities, locality, habitat, and the nature of the substratum on which they grow, or to the environment generally, but most of these vegetative characters are reducible to a few well-marked types, which we may now consider, as they are of great importance to the cultivator.

What may be considered as the most elementary type, as to it belongs the most ancestral of existing Orchids—the Apostasieæ,—comprises such plants as Sobralia, Calanthe, Phaius, the foliose Cypripediums, and various others not so well known in caltivation. They are terrestrial plants, usually with short creeping rhizomes and fibrous roots, and erect secondary stems or branches, with plicate more or less membranaceous leaves. Most of them succeed if potted as an ordinary soft-wooded plant, if only the proper treatment with regard to heat, moisture, shade, and rest is given—and in this respect they are very various in their requirements—but treating them as epiphytes would be not only unnatural, but would in many cases be only courting failure. And just to illustrate a point previously mentioned I may point out that Phaius tuberculosus has so far departed from the normal character of the genus as to have become epiphytic, while Calanthe vestita has developed large pseudobulbs and has become deciduous, which peculiarities necessitate a quite different method of treatment.

A little higher in the series may be placed such members of the Neottieæ as Goodyera and the Anœctochilus group, which retain much of the general character of the preceding, but in many cases have developed broader leaves arranged in a tuft at the base. Many of these plants grow in shady woods, upon humus, and these peculiarities have to be borne in mind in cultivating them.

The genus Vanilla is another curious modification, having developed a climbing habit, with ærial roots, and succulent stems and leaves, peculiarities connected with their forest habitat, and the necessity of getting up into the light and air while still remaining terrestrial.

A succeeding phase of development to that of Neottieæ is seen in the Ophrydeæ, which in many cases have developed underground tubers and a deciduous habit. Such plants require a distinct period of rest, and frequently give the cultivator a good deal of trouble.

Returning to the group first mentioned we find a modification in another direction, where the plicate membranaceous leaves have become conduplicate and coriaceous, as in the tropical Cypripediums, and the higher ones

curiously tessellated with two shades of green—a peculiarity for which, as in the case of the variegated leaves of Anœctochilus, I believe no satisfactory explanation has been given.

Yet another modification is the development of an epiphytic habit, as in so many of the commonly cultivated Orchids, and this is clearly another provision for allowing the tropical forest species to reach the light and air. Correllated with the epiphytic habit—at all events in a large number of cases—is the development of variously thickened stems or fleshy pseudobulbs, an evident provision for enabling the plant to pass safely through the dry season. Then we get ærial roots with their modified structure and special covering of velamen, all of which peculiarities have their special meaning to the cultivator.

Some of these epiphytes have retained the ancestral character of having plicate leaves, as in the Cyrtopodium group, the Catasetum group, &c., while others have become conduplicate and coriaceous, as in the Maxillarieæ, Oncidieæ, Epidendreæ, Dendrobieæ, &c., and some of the latter do not develop thickened pseudobulbs, as Pleurothallis, Masdevallia, &c.

With the exception of Vanilla the preceding groups are what is termed sympodial, that is to say the axis or stem soon ceases to grow, usually at the end of the season, and the new growth starts from the side. Opposed to this is the monopodial type in which the axis continues to grow in one direction from season to season, and bears roots right up the stems. This type includes all the Sarcantheæ, as Vanda, Aërides, Phalænopsis, Angræcum, &c., a distinct type of growth which every cultivator will recognise as requiring a different kind of treatment.

These are the principal types of vegetative structure, though some plants are more or less intermediate between two given types, and all these different types have their meaning for the cultivator. There are also some special forms, which are developments of one or another of the preceding.

Thus the stem may become much elongated and climbing, as in Renanthera coccinea, which on this account can only be grown successfully in situations where the necessary space can be given. The pseudobulbs may also become hollow, as in Epidendrum bicornutum and the Schomburgkias, which in a wild state are tenanted by colonies of ants, whose presence, however, is not necessary to the plant's existence, as they can be successfully cultivated at home. These plants, like the species of Coryanthes, seem to provide accommodation for the ants, in return for services rendered by the latter in keeping their natural enemies, the cockroaches and other insects, at bay. In the case of Coryanthes, the ants do not live within the plant, but only among its roots, and although these plants seldom live long in cultivation, I think it is not so much due to the absence of their natural protectors, as to the difficulty of providing suitable treatment. They

are usually found growing on long climbing stems, often called bush-ropes, and develop a mass of roots, among which not only the ants live, but frequently several other plants, in a kind of happy family, as is seen in a figure in Rodway's work, *In the Guiana Forest* (reproduced in *Orchid Review*, III. p. 41). It is said that the ants are invariably found with these plants, which, however, may arise from the depredations of their enemies if the ants are not present. They are nearly allied to Stanhopeas, and should receive similar treatment.

The leaves, too, are very various in structure, ranging from membranaceous to very fleshy, some of the former being unable to bear anything like direct sun-light. Some are terete and fleshy, like Vanda teres and Oncidium Jonesianum. Such plants hardly require shading at all. Very succulent and fleshy leaves also occur in Oncidium Lanceanum and its allies, and this is evidently a provision for tiding over the dry season. The species of this group are particularly liable to spot during the dull season, and require to be very carefully watered except when actively growing. Sometimes even the leaves are suppressed, and the work of assimilation is carried on by green colouring matter in the roots, as in the leafless Angræcums, Doritis tæniale, and others.

These various peculiarities have been gradually developed under changed conditions of existence, and have become constitutional. If the plants were not in harmony with their environment they would soon avail themselves of the numerous facilities offered for changing them, or would be crowded out by a host of competitors. And as many of them are not very plastic in constitution, it follows that the essential natural conditions under which they exist in a wild state must afford a guide to the cultivator as to suitable method of treatment, and that the failure to imitate these conditions sufficiently must result in failure.

*(To be concluded.)*

## CATTLEYA TRIANÆ VARIETIES.

THE range of variation seen in Cattleya Trianæ and the difficulty of naming many of the different forms is well shown by a series of flowers just received.

It will be remembered that a complete list of varieties was given at pages 114—119 of our third volume, classified as far as possible, though owing to some of them being very vaguely described, and others not at all, the arrangement is not perfect. This would alone be possible if a complete series either of the flowers themselves or accurate drawings of them could be brought together. Several of the named forms are individuals rather than varieties,

and all would not stand the test of comparison side by side. Still the list is better than none at all, and we are glad to find that some of our correspondents have found it useful.

Four different forms from the collection of E. A. Bevers, Esq., Broadstreet, Oxford, include one much like the variety Juno, a light blush flower of good shape, with deeper coloured lip; var. rosea, with light lilac-rose flowers, very little darker on the lip, and the usual yellow throat; a third small paler form, perhaps not fully developed; and a fourth which must be considered as about typical.

A very fine example of the variety rosea comes from the collection of J. Bradshaw, Esq., The Grange, Southgate, through Messrs. Hugh Low & Co. The petals measure $3\frac{3}{4}$ inches long by over $2\frac{1}{2}$ inches broad, and the colour is beautiful soft rose, nearly uniform throughout with the exception of the orange disc.

From the collection of John Falconer, Esq., St. Ann's, Lasswade, Midlothian, come three very good forms. The first corresponds to the variety tricolor, the flower being medium sized, the front lobe of the lip bright rose-purple, the disc yellow, the side lobes tinged with blush-pink, and the sepals and petals white. A second is near var. Capartiana, having rose-pink sepals and petals, with a feather-like darker marking at the apex of the latter, and the front of the lip very deep crimson-purple. A third form is near var. rosea, but has the sepals and petals of a decidedly lighter shade of blush-pink than the lip. It is of medium size, and may not be fully developed.

A large and handsome form comes from the collection of F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey, which approaches very nearly the variety magnifica, the sepals and petals being rosy lilac, the front of the broad lip rich purple-crimson, and the disc deep yellow.

A well-coloured fairly typical form has also been sent from G. F. Moore, Esq., of Bourton-on-the-water, Gloucestershire.

Two handsome forms have been sent from the collection of R. B. Macbean, Esq., St. Mary's Gate, Lancaster. One approaches the variety formosa, having blush pink sepals and petals, a rich rose-majenta lip, and the yellow disc a little veined with reddish purple. The form and size is excellent. The other was reported upon at page 75 of our last volume, and retains its character, but has now reached the normal size. The zone of white which separates the yellow throat from the crimson-purple front lobe, and paler margin of the side lobes, is a very distinctive feature, and as we fail to trace anything like it among named forms, we propose to call it var. zonatum. In the blush-pink sepals and petals it closely resembles var. Arkleana (*supra*, IV., p. 81, fig. 5), but the lip is wholly different, as described above. It is very beautiful.

## ODONTOGLOSSUM CRISPUM.

A QUESTION has recently been raised by Mr. De Barri Crawshay, "What constitutes a crispum?" (*Gard. Chron.*, Nov. 21, p. 632). The question specially arose with respect to the O. crispum Golden Queen, from the collection of W. Thompson, Esq., Waltham Grange, Stone, Staff., to which an Award of Merit was given on Nov. 10th last. Mr. Crawshay remarks that if all the plants that have been certified by the Royal Horticultural Society and other Societies the world over could be got together in bloom the amount of variation seen would be startling, and if Bateman mistook and re-named Lindley's species as O. Alexandræ, what would he say now were the thousands of much-mixed forms presented to him? Perhaps if all who have a theory were to meet and settle the points that determine a crispum it would be possible to lay down a law whereby plants in future could be correctly named, and hybrids relegated to their nearest named forms. There are three so-called species which grow together, O. crispum, gloriosum, and Lindleyanum. "Look over 1,000 in bloom at once out of one importation, and you will see a large majority of white or rose-tinted forms, these I believe to be crispum; you will also find a small percentage of gloriosum, and still possibly a smaller one of luteopurpureum. You will find a small proportion of hybrids called O. × Andersonianum (crispum × gloriosum), and also possibly a still smaller number of hybrids called O. × Wilckeanum. These three species and their resulting primary hybrids are the first links in a terribly long and confusing chain. O. luteopurpureum and gloriosum are easily known; therefore why not crispum? The true crispum, I believe, is the spotless form that has a yellow disc to the lip, two yellow teeth at the base, and the two plates at the sides of its channel under the column only sufficiently raised from the surface so as to expose the ends of the nerves like tiny points. As soon as the yellow usurps more than the disc of the lip, and as soon as spots and marks appear, then I consider that there is evidence of hybridity. No one can tell the myriads of cross-fertilizations that have taken place. This has been proceeding till one can only fancy there is not a true crispum left."

Replying to this, Mr. Thompson's gardener, Mr. Stevens, refers to botanical descriptions and figures of O. crispum, which include both yellow and spotted forms, which Mr. Crawshay would exclude. "If we accept his theory we shall have a difficulty in classing the yellow and spotted forms. I cannot help thinking that as long as a flower has the characteristics of O. crispum, as laid down by experts, we must accept it, notwithstanding the variation in colour. . . . It will be difficult to persuade growers of Odontoglossums that such varieties as . . . Stevensii, Chestertoni, apiatum, Cooksoni, and the thousand-and-one fine

varieties . . . also the yellow ones that now and then crop up, are not crispums; and if they are hybrids they run so near to O. crispum as to be indistinguishable from it in form" (*l.c.*, Dec., 5, p. 686).

Mr. Crawshay replies that "there is great difficulty at present in really proper classification of the thousand-and-one forms, and to save a good deal of trouble a great many are called crispums that have no right to be so called. I can recall a plant under the care of 'W. S.' once figured as crispum ocellatum; that plant he has since shown, it is a beautiful 'Ruckerianum'—he knows it, too. 'W. S.' chose one in his list, viz., that distinct thing 'Chestertoni,' as one that it would be difficult to persuade growers was not a crispum. Baron Schröder showed the original plant on November 10th, 1896, and had 'W. S.' looked carefully into that flower he would have seen that it was a hybrid containing a lot of luteopurpureum, with the whole ground colour yellow, the sepals and lip only heavily blotched. This is the plant sent over by and named after Chesterton (see *Veitch's Manual*, p. 31). Those in collections and known as Chestertoni, as far as I have seen (*vide* the Pollett Sale Catalogue, March 15th, 1893), are only fine broad so-called crispums, full of spots, and totally unlike the original named one" (l.c., Dec. 26, p. 778).

The point at issue seems to be this: How far is the polymorphism seen in O. crispum, so-called, due to variation pure and simple, and how many of the so-called varieties of O. crispum are really of hybrid origin, and therefore not true varieties of crispum at all? On both these points a large number of facts may be found in my papers on "Hybrid Odontoglossums," where the hybrids between O. crispum and the three species with which it grows are worked out almost exhaustively (*Orch. Rev.* I. pp. 142, 170, 201, and 275). It is these hybrid forms which obscure the true limits of O. crispum, which is very distinct from the other three, gloriosum, luteopurpureum, and Lindleyanum. And in most cases it is possible, with proper materials at hand, to determine the parentage of any of the hybrids from the O. crispum district. The first thing to be done is to ascertain the range of variation of true O. crispum, and here I cannot agree with Mr. Crawshay, for there are both yellow and spotted forms in which I cannot detect the slightest deviation from the typical O. crispum in its essential characters, and especially in the details of the crest. This I should consider to be the case with O. crispum Golden Queen, which at the first glance I took to be a form of O. × Wilckeanum, but on careful examination failed to find a single character that could be ascribed to the influence of O. luteopurpureum. No one may be able to tell the myriads of cross-fertilisations that have taken place. Messrs. Veitch remark that "the agency by which these hybrids and polymorphisms have been produced has been in operation for ages past, and it cannot but have happened that a large number of these

forms . . . are not the immediate offspring of two recognised species or more primitive type, but are descended from their mixed progeny, further complicated by an occasional cross with one or other of themselves." My attention has long been turned to this point, but I have never yet been able to find a hybrid in which I could trace the influence of a third species, which would almost certainly be the case if cross-fertilisation were carried on to the extent here suggested. I do not think we have yet clear evidence of the existence of a secondary hybrid, comparable with those artificially raised in other genera. This is a very interesting question, and is not without some bearing on the very origin of species. I think, however, that Mr. Crawshay is right about Chestertoni, and actually omitted it because of the conflicting evidence. Some of the forms of O. × Wilckeanum are rather puzzling, yet the shape of the lip and structure of the crest of O. luteopurpureum is so essentially distinct from those of O. crispum that I believe all the variations of this hybrid can be traced by careful comparison. The series of glorioso-crispum hybrids are of course not varieties of O. crispum.

R. A. R.

## CYPRIPEDIUM × GODEFROYÆ.

THIS is a most interesting hybrid, as flowered in the collection of G. W. Law Schofield, Esq., New-Hall-Hey, Rawtenstall, Manchester. For some time it has been contended that some of the forms of Cypripedium Godefroyæ, known as the leucochilum variety, were possibly natural hybrids, and this contention has been formed as much on the intermediate characters of the habit of their growths as in the flowers. The flowering of this hybrid will, I think, not only prove that variety to be a natural hybrid, but clearly shows the so-called species, C. Godefroyæ, to be a hybrid also; as the particulars below will indicate. It was raised in the collection of Sir C. Strickland, between C. bellatulum and C. concolor, and came into Mr. Schofield's possession through Messrs. Cowen. Mr. Schofield only wishes the fact of its having been artificially raised to be recorded for it would be impossible to separate it from a fine form of C. Godefroyæ. The dorsal sepal is 1⅜ inches across, white and thickly spotted with purple towards the base. The petals are each about 1½ inches long by 1⅜ inches broad, creamy white, slightly suffused with rose, and thickly covered with small dark-purple spots. The lip is white with numerous small purple spots, in form having the general character of C. niveum. The staminode is yellow in the centre, shading to white, which is thickly covered with minute purple spots. The sepals and petals overlap each other, giving perfect form to the flower.

H. J. C.

## CATTLEYA FLOWERING FROM RHIZOME.

I HAVE about six large plants of Cattleya Warscewiczii (gigas), and as I could not get them to bloom I put them out of doors in all weathers from June last until the end of October. They were then taken into the house, as they were starting into growth. One of them pushed up a flower directly from a small eye on the rhizome, with no leaf and no bulb, which flower opened in January. I took a photo of the plant, but there was not much light, so I fear the prints are not very good, but they will show you what the plant was like.

Oxford. E. A. BEVERS.

[A remarkable example. The peduncle is slender, longer than the pseudobulbs (indeed, one-and-a-half times as long as the broadest diameter of the flower), and arises precisely as above stated. Thus both the pseudobulb and leaf were totally undeveloped, perhaps on account of the severe treatment adopted. The plant looks sturdy enough, and it would be interesting to hear of any other result of the treatment. We should suggest trying two or three different kinds of treatment, noting the one which proved most beneficial.—ED.]

## A HYBRID DENDROBIUM.

A VERY pretty and most interesting Dendrobium has been sent from the collection of G. F. Moore, Esq., of Bourton-on-the-Water, Gloucestershire, through Mr. James Cypher, with the following note:—"A hybrid Dendrobium, D. thyrsiflorum × nobile nobilius. Growth very like D. nobile, and the blooms produced in a similar way, three on the spike, and looks very beautiful on the spike." The flower sent is much like a very pale D. nobile, altogether different from D. n. nobilius, and the sepals and petals are of a peculiar yellowish-white, except at the tips, where they are lightly flushed with rosy purple. The lip is also much as in D. nobile, but a little more yellow in front of the maroon disc. No one without the above information would think of D. thyrsiflorum as one parent, yet some modifying agency has been at work, and we hope to be furnished with the exact history of this plant. This is not the first instance where the influence of one parent seems to have been almost lost, and it would be a most interesting matter to have the whole question properly investigated. Will our correspondents send us any facts they may be acquainted with which bear up on the question? We have no previous information of the above cross having been previously attempted.

## NOVELTIES OF 1896.

We seem to become more and more dependent on the work of the hybridist for the introduction of novelties of sterling merit, as each year increases the difficulty of discovering such things in a wild state. Of the latter, the year 1896 has nothing very striking to record, except among varieties of well-known garden plants. Among botanical Orchids interesting things keep turning up, and will probably do so for a long time to come. Among those credited to last year's account may be mentioned Stanhopea impressa, Chondrorhyncha albicans and Mormodes badium, from the collection of the Hon. Walter Rothschild. Bulbophyllum Ericssoni has flowered in the same collection. Lanium subulatum, Macodes Sanderiana, Cyrtopodium micranthum, Epidendrum xipheroides, Oncidium Godseffianum, and Gongora Sanderiana flowered with Messrs. F. Sander & Co. Epidendrum Barbeyanum and Rodriguezia inconspicua appeared with M. Barbey, of Geneva. Restrepia sanguinea was introduced by Messrs. Charlesworth & Co. Others recorded are Dendrobium quadrilobum, from the collection of F. A. Newdigate, Esq.; D. Jennyanum, which appeared with M. Zollinger-Jenny, Zurich; Cœlogyne Lauterbachiana, flowered in the Berlin Botanic Garden; Acanthophippium eburneum, with M. Paul Wolter, of Magdeburg; Sobralia Brandtiæ, with Mrs. Brandt, of Zurich; Bulbophyllum othoglossum, with M. Wendland; B. longiscapum flowered at Kew; Spiranthes metallica with Messrs. James Veitch & Sons; B. attenuatum and Epidendrum atrorubens with Messrs. Linden. A few of these appeared previous to last year, but have only now been described, while conversely a few supposed novelties which flowered in 1896 have not been recorded. One or two of the preceding may not really be new, though recorded as such.

Numerous handsome varieties of well-known garden plants were recorded, but it is rather difficult to say how many are really distinct from pre-existing varieties, especially in such species as Odontoglossum crispum, Cattleya Mossiæ, and Lælia purpurata, of all of which new varieties have been recorded, which we have not space to enumerate in detail. Cypripedium Fred Hardy, from the collection of F. Hardy, Esq., is one of the most interesting plants of the year, and, as pointed out when it was figured at page 17, it is a little doubtful whether it is an albino of Cypripedium Charlesworthii or a natural hybrid from it and something else. An albino of Lælia pumila præstans also flowered in the collection of D. B. Rappart, Esq.

Among natural hybrids the most remarkable is the one called Cattleya × Le Czar, introduced by Messrs. Linden, to which a First-class Certificate was awarded by the Royal Horticultural Society. It is clearly descended from C. labiata and C. granulosa. Dendrobium × Rolfeæ candidulum is a very pretty white variety from the collection of T. A. Gledstanes, Esq.

Of garden hybrids the list is extensive, and the following notes only include the more striking ones. Dendrobium × Wiganiæ (nobile ♀ × signatum ♂) was raised in the collection of Sir Frederick Wigan, but shortly afterwards flowered also with Sir Trevor Lawrence and Messrs. Veitch, all having made the same cross. From Sir Trevor Lawrence also came D. × Kingiano-speciosum. From the collection of N. C. Cookson, Esq., have appeared Lælio-cattleya × Bryan (C. Gaskelliana ♀ × L. crispa ♂), Dendrobium × Kenneth (Bensonæ ♀ × Maccarthiæ ♂), D. × Harold (Findlayanum ♀ × Linawianum ♂), and the interesting and beautiful Odontoglossum × crispo-Hallii. Very interesting, too, is the confirmation of the supposed parentage of Cattleya × Hardyana in the same establishment. From the collection of the Right Hon. J. Chamberlain, M.P., comes the interesting Lælio-cattleya × highburiensis (C. Lawrenceana ♀ × L. cinnabarina ♂) and Dendrobium × Andromeda (D. × Leechianum ♀ × D. × Cassiope ♂).

From the collection of C. L. N. Ingram, Esq., have appeared Cattleya × Eclipse (maxima ♀ × Skinneri ♂), C. × Jupiter (Lawrenceana ♀ × Warscewiczii), C. × Firefly (Dormaniana ♀ × Bowringiana ♂), C. × Triumph (Lueddemanniana ♀ × Lawrenceana ♂), Lælio-cattleya × Sir William Ingram (L. purpurata ♀ × C. Dowiana aurea ♂), L.-c. × Seraph (L.-c. × elegans ♀ × C. citrina ♂), L.-c. × Cicero (C. intermedia ♀ × L.-c. × elegans Turneri ♂), and L.-c. × Electra (C. Percivaliana ♀ × L. purpurata ♂).

Other interesting things are Cypripedium × Wootoni (callosum ♀ × bellatulum ♂), from the collection of R. I. Measures, Esq.; Masdevallia × Curlei (macrura ♀ × tovarensis ♂), from A. Curle, Esq.; Cypripedium × Schofieldianum (bellatulum ♀ × hirsutissimum ♂), from G. W. Law-Schofield, Esq.; C. × Harrisander, from W. C. Clarke, Esq., though raised by Mr. Charles Winn; C. × Amesiæ (tonsum ♀ × Fairieanum ♂), from Mrs. F. L. Ames; C. × Symondsiæ (venustum × purpuratum), from H. J. Ross, Esq.; C. × Lloydiæ (Godefroyæ ♀ × venustum ♂), from R. H. Measures, Esq.; Lælio-cattleya × Ghislainæ (L. harpophylla ♀ × C. amethystoglossa ♂), from M. A. Van Imschoot; L.-c. × belairensis (C. Bowringiana × ♀ L. autumnalis ♂), from M. G. Martin; L.-c. × velutino-elegans (C. velutina ♀ × L.-c. × elegans), from M. Fournier; and Masdevallia × Acis (abbreviata ♀ × Chelsoni ♂).

Messrs. James Veitch & Sons, as usual, have flowered a number of handsome hybrids, one of the best being Lælio-cattleya × Decia alba, a charming white variety of the hybrid between Lælia Perrinii ♀ and Cattleya Dowiana aurea ♂, L.-c. × Rosalind (C. Trianæ ♀ × L.-c. × Dominiana ♂) is another large and very handsome thing. L.-c. × Tiresias (C. Bowringiana ♀ × L.-c. × elegans ♂) is also very promising,

and L.-c. × Doris var. Xantho is a striking yellow variety of a hybrid which first appeared in 1894. Cattleya × Euphrasia (Warscewiczii ♀ × superba ♂), C. × Elvina (Trianæ ♀ × Schilleriana ♂), and C. × Apollo (Mossiæ ♀ × Aclandiæ ♂), are all very promising. Epidendrum × elegantulum (E. Wallisii ♀ × E. × Endresio-Wallisii ♂), and Masdevallia × Ajax (M. × Chelsoni ♀ × M. peristeria ♂), are two interesting secondary hybrids, as is also Chysis × langleyensis (C. × Chelsoni ♂ × C. bractescens ♂). Phaio-calanthe × Sedeni albiflora and Selenipedium × Schrœderæ candidulum are also a pair of sterling novelties. Among Cypripediums may be mentioned C. × Baron Schröder (C. × œnanthum superbum ♀ × C. Fairrieanum ♂), C. × Eurydes (C. × Leeanum ♀ × C. Boxallii ♂), and C. × Regina (C. × Leeanum ♀ × C. Fairrieanum ♂). Phalænopsis × Ariadne is an interesting hybrid, raised from P. Aphrodite ♀ and P. Stuartiana ♂.

Messrs. F. Sander & Co. have flowered several interesting things, the most remarkable being Calanthe × albata (C. veratrifolia ♀ × C. × Cooksoni ♂), the first successful cross between the evergreen and deciduous sections of the genus. Phaius × Ashworthianus (Wallichii var. Mannii ♀ × maculatus ♂) and Dendrobium × Curtisii (D. × Cassiope ♀ × aureum ♂) are also very promising. Several Cypripediums, too, must be mentioned, as C. × Minnie Ames (Curtisii ♀ × concolor ♂), C. × A. R. Smith (callosum ♀ × Druryi ♂), C. × Fairy Queen (Curtisii ♀ × Druryi ♂), C. × Neptune (C. × Io grande ♀ × C. Rothschildianum ♂), and several other good secondary hybrids.

Cattleya × super-Forbesii (C. Forbesii × superba) appeared with Mr. James Cypher, of Cheltenham, and *Zygopetalum* × Perrenondi (intermedium ♀ × Gautieri ♂), with M. A. A. Peeters, of Brussels.

The foregoing is not by any means an exhaustive list, but it contains most of the important novelties of the year. Varieties have been for the most part omitted, also those with new names which are synonymous with pre-existing forms—a class always far too numerous.

## THE HYBRIDIST.

### Phalænopsis × Hebe.

This is a very interesting and pretty hybrid, raised in the establishment of Messrs. James Veitch and Sons, from Phalænopsis Sanderiana ♀ and P. rosea ♂, to which an Award of Merit was given by the Royal Horticultural Society on February 9th, last. As might be supposed, it bears a considerable resemblance to P. × intermedia, the difference in parentage being that

P. Aphrodite is replaced by the closely allied P. Sanderiana. The raceme sent bears four expanded flowers, which are blush white, a little veined and suffused with light rose near the base of the petals, while the lip is bright rose; a little mottled on the side lobes, and with the usual crest and very short tendrils. There are three unopened buds, and the raceme will doubtless become much larger when the plant becomes strong. The largest leaf is at present 5½ inches long by 2½ inches broad.

### DENDROBIUM × BURBERRYANUM.

We have received flowers of this very pretty Dendrobium from the collection of the Right Hon. J. Chamberlain, M.P., Highbury, Birmingham. It was obtained by crossing D. Findlayanum with the pollen of D × Dominyanum, and combines the good qualities of the two, though the flowers most resemble the latter, both in shape and colour. The flowers measure over 2¾ inches across the petals, and the colour is bright rose-purple, becoming a little paler towards the base of the segments. The lip is similarly coloured at the apex and margin, passing into yellowish white in front of the large maroon disc, which is somewhat veined at the margin. The pedicels are rather long, measuring 2¼ inches, which will render it useful for cut flowers. This character is no doubt partly due to the influence of D. Linawianum, one of the parents of D. × Dominianum, which has long pedicels, and always seems to stamp its character upon its offspring. D. Findlayanum has also rather long pedicels. The present hybrid is a very promising thing, and has evidently not yet reached its full development. It is named after Mr. Burberry, Mr. Chamberlain's able Orchid grower.

### CATTLEYA × MIRANDA.

A very pretty hybrid was exhibited by Messrs. James Veitch & Sons at the R.H.S. meeting on January 12th, under the above name. It was obtained by crossing C. amethystoglossa ♀ and C. Trianæ ♂, and thus makes a second hybrid raised from C. amethystoglossa. We have now received flowers from two different plants of the reverse cross, raised in the collection of T. W. Thornton, Esq., Brockall, Weedon. Mr. Thornton writes that the cross, C. Trianæ × amethystoglossa, was made in February, 1887, and the seed was sown in June, 1888. Whether they are now flowering for the first time is not mentioned. The flowers are fairly intermediate in size and character, the lip three-lobed, but the lobes touching, so as to appear entire at the first glance. The front lobe and apex of the side lobes are rich rose-purple, and the basal part, with the sepals and petals, pale blush pink. How far it agrees with Messrs. Veitch's plant we cannot say without being able to compare them together, but at most it can only be a variety of the same, with reversed parentage. It is a very promising thing and will evidently develop into a very handsome hybrid when it becomes stronger.

## ODONTOGLOSSUM CRISPUM IMPERATOR.

A MAGNIFICENT form of Odontoglossum crispum has appeared in the collection of John S. Moss, Esq., Wintershill, Bishop's Waltham, which is represented in the annexed figure. The photograph reproduced has been kindly sent by Mr. Moss, who states that it is exactly natural size, and the illustration has been prepared from it entirely by photographic process, but has been reduced, however, ¼-inch in diameter during the process. Otherwise it is an exact *fac-simile* of the flower, with the single exception of colour. The sepals are very broad, and the petals quite exceptional in this respect.

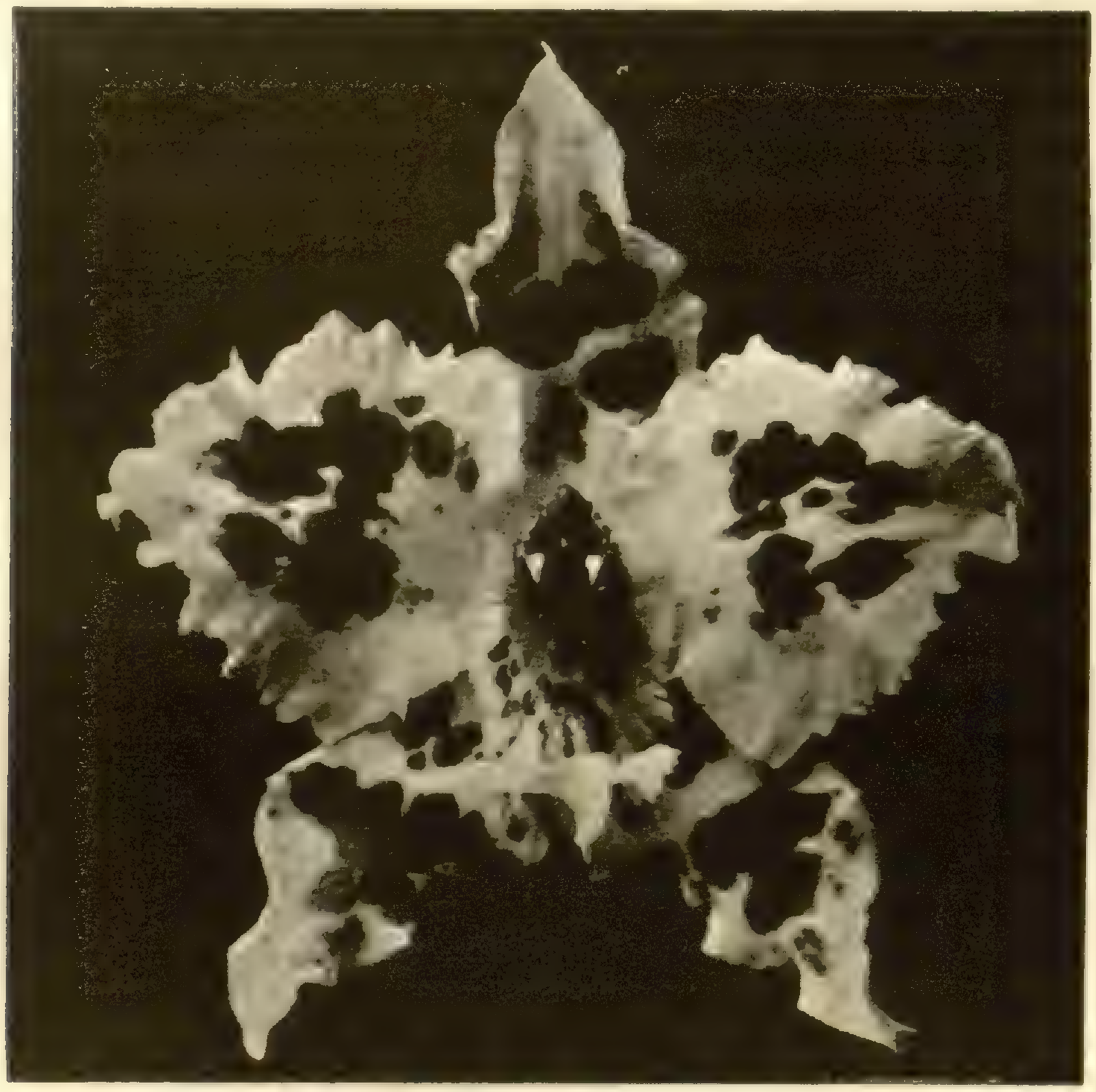

Fig. 5.—ODONTOGLOSSUM CRISPUM IMPERATOR.

Both sepals and petals are suffused with rose-pink, which does not come out in the photograph, and this colour is still darker on the back of the segments. The markings are red-brown, and in other respects speak for themselves. A well-known expert has pronounced it to be the finest form of O. crispum which he has ever seen, and if any of our readers has a form which surpasses it we hope he will forward a flower. In form, colour and markings it is excellent, and Mr. Moss must be congratulated upon the possession of such a superb variety. It has far broader petals than O. c. Rex, figured at page 241 of our second volume, though approaching it in some respects.

# THE RAISING OF ORCHID SEEDLINGS.

By R. EICHEL, Bradford.

*(Continued from page 40.)*

I HAVE found several Cymbidium seedlings in most unlooked-for places. One was found growing underneath a pot on the woodwork of the stage. Another grew underneath the stage, firmly attached with fleshy roots to the woodwork. On various occasions I have seen stray seedlings growing out of the holes of perforated pots, between the rods of teakwood baskets, on a piece of charcoal inserted into the pot, &c. These stray seedlings should always be treated with a certain amount of suspicion. After passing the first fifteen months the seedling is practically safe, unless attacked by cockroaches, wood-lice, or even a still more dangerous enemy—fungus—for which various remedies must be applied. With due care the young plants will improve with every growth, and it is almost a matter of difficulty to give them the rest so essential to their well-being. A good plan is to remove the young plants into a slightly cooler compartment, and by withholding the water for a short period they will rest to a certain extent.

SEED-PARENTS.—As notified before, I will give, as far as my experience goes, a list of plants which are good seed-parents, and may thus be relied on. First and foremost is Lælia cinnabarina. It will hybridise almost with anything. What a glorious cross the Indian red flowers will make with the labiata section of Cattleyas. I venture to prophesy that the offspring of this plant will have a great future as a florist's flower. The long sprays of numerous flowers, the exquisite colour and the good behaviour of the plant, are qualities which are sure to attract the attention of the hybridiser. Lælio-cattleya × Hippolyta and L.-c. × Phœbe, are excellent examples, and speak for themselves. Next on the list is Cattleya Bowringiana, another plant whose seedlings are sure to have a great future. The lovely Cattleya × Mantini, raised simultaneously by M. Georges Mantin and Messrs. James Veitch and Sons, is one of the first of a series from which, no doubt, a good many hybrids will appear in due time. Lælia purpurata and Lælia tenebrosa run a close race. I think, however, tenebrosa is the better of the two, and the supposed natural hybrids, Lælio-cattleya × Gottoiana and L.-c. × albanensis, confirm my opinion. Numerous crosses have been effected in various collections. The plant, however, has only been introduced since 1890—hardly sufficient time for the hybridiser to produce flowering plants. Lælia purpurata has produced some bold hybrids, and will still hold its own ground. Cattleya bicolor, C. Loddigesii, C. Harrisoniana, C. Aclandiæ, C. Dormaniana, C. velutina, and C. granulosa var. Schofieldiana are good seed-parents, and may be relied on, while the majority of the labiata group, such as C. labiata, C.

Schroederæ, C. Trianæ, C. Lueddemanniana, C. Dowiana, and its variety aurea, are not very safe. The seed of C. labiata is very small indeed, and does not germinate with freedom, as one would think. I know several collections where apparently good seed-pods have been obtained, but no seedlings have been raised from them. Lælia crispa, L. Dayana, L. harpophylla, L. Perrinii, and L. præstans are, on the whole, fairly good parents, and can be relied on. Lælia Digbyana, the desideratum for hybridising purposes, is neither a good seed-bearer nor a good subject to fertilise. It is therefore advisable to use this plant for pollen parent only. My esteemed friend, the Rev. F. D. Horner, successfully obtained a couple of seed-pods at the expense of his plants. Unfortunately, no progeny has been raised.

Dendrobiums require similar treatment to that recommended for Cattleyas; they are of quicker growth, and on the whole require less attention. Numerous crosses have been obtained from D. nobile and its varieties, and secondary hybrids from the offspring. Compare D. nobile and D. × Apollo, truly a marvellous improvement, obtained through the skill and perseverance of Mr. J. Cypher. The nigro-hirsute class, such as D. Jamesianum, D. infundibulum, D. Draconis, &c., do not readily cross with D. nobile, D. Wardianum, &c., and Dendrobium Brymerianum is a most difficult subject to deal with, and cannot be recommended as a seed-parent. D. Wardianum is another bad seed-parent; in fact, very difficult to fertilise. Only one cross has so far been recorded where D. Wardianum acted as seed-bearer, namely, D. Lutwychianum. Looking over the meetings of the R.H.S. I find that Sir Trevor Lawrence exhibited two plants, the offspring of D. Wardianum. D. fimbriatum, D. clavatum, D. Calceolus, and D. chrysotoxum are most difficult to fertilise. Mr. White, Sir Trevor's able gardener, told me that he tried over 100 flowers a couple of years ago without success. Pretty and interesting hybrids have been raised from D. Findlayanum, which, no doubt, will lend themselves admirably for secondary crosses. D. Phalænopsis has not been sufficiently long imported to prove its value as a seed-parent; the flowers I find, however, are not easy to hybridise. There is yet a large field open for the hybridist; Dendrobiums are the favourites of most Orchid growers, and every improvement is hailed with great pleasure.

Cypripediums are easily raised from seed, and so numerous are the crosses that it is almost labour in vain to raise any more, except by crossing varieties of sterling merit to effect an improvement. The hybrids of Cypripedium bellatulum, Godefroyæ, niveum, and concolor are an exception to the rule; they do not germinate with freedom in spite of labour and care bestowed upon them. The seed of these varieties should be sown in a mixture of sandy fibrous loam, to which a little peat is added; a capital

loam fit for the purpose can be obtained from Malton, in Yorkshire. The young seedlings are very subject to damping off, especially during the winter time. Careful watering and attention is absolutely necessary.

Odontoglossums are most difficult to raise from seed: the first artificially raised plant from seed recorded is O. × Leroyanum, *vide O.R.*, Vol. I., page 204, raised by M. Leroy, gardener to Baron E. de Rothschild, Armainvilliers, near Gretz, France. While on a visit to these famous gardens in 1889 I had the privilege to see these tiny seedlings, seven in number, I believe, growing in the nicks of Paris stone, a soft porous stone almost like tufa. I had a pleasant chat with M. Jacques, chef de cultures, respecting these seedings, and gained a great deal of information. They germinated in a Cool house, and seemed quite happy. To Messrs. Veitch belongs the honour of flowering the first artificially raised hybrid Odontoglossum in this country, O. × excellens, and Mr. N. C. Cookson recently exhibited a hybrid of O. Hallii, O. × crispo-Hallii. Odontoglossum seed has been sown by many and in various ways, but without much success. A friend of mine gave me once a pod of O. Uro-Skinneri × O. Harryanum, well ripened in the country, and with apparently good seed, but no progeny has appeared, and is not likely to appear now; possibly some more successful raiser will give his experience, for which every Orchid grower would be grateful. Odontoglossums intercross readily in their native habitat, more so than any other genus. Why should they not be produced from seed in this country?

*(To be continued.)*

## SACCOLABIUM BARBEYÆ.

Saccolabium Barbeyæ was described about a year ago by Dr. Kränzlin (*Bull. Herb. Boiss.*, IV., p. 40), from a specimen which flowered in the collection of Madame Barbey-Boissier, La Pierriére, Switzerland. It had been received from the Congo. An authentic specimen sent to Kew by Mr. James O'Brien shows it to be nothing else but the old Angræcum imbricatum, Lindl., which has long been known in gardens, though not being showy, it is somewhat rare. It is a climbing species, with ovate-oblong bilobed leaves, and short axillary racemes of distichous closely imbricating bracts, and greenish white flowers with a recurved clavate spur. It is found in several localities in West Africa. Barter, who collected it at Onitscha on the river Niger, records it as abundant on the lower parts of the river; the flowers white, inconspicuous, and very fragrant, adding that "on still nights the river resembles a close Orchid-house with Cymbidium sinense in flower."

R. A. R.

## CYPRIPEDIUM SANDERÆ.

We have received from H. Gurney Aggs, Esq., Pippbrook, Dorking, a flower of Cypripedium villosum with the following note:—"I enclose the flower of a Cypripedium that was bought by me last March at Messrs. Protheroe & Morris's Sale Rooms, provisionally named Cypripedium Sanderæ, but as you will see it turns out to be only C. villosum. As there were a large number of plants sold it would be of interest to know if others have flowered it, and if with the same result. I think I remember seeing a painting of the supposed flower, and it was described as the Mastersianum of the cool district. I have two or three other plants, and shall be curious to see how they turn out." The flower sent is an ordinary C. villosum, and suffices to show the value of the above name, which certainly ought not to have been given. We had not previously seen it in flower. If our readers will turn to page 139 of our last volume they will find some remarks by "Argus," and one of his correspondents upon the subject, and the doubts about the plant's identity may now be set at rest, unless indeed other correspondents can throw any new light upon it.

## DENDROBIUMS IN SEASON.

We have received from Mr. James Cypher, Queen's Road Nursery, Cheltenham, a series of most beautiful Dendrobiums, which show how successful is the method of culture adopted, which was given in detail at pages 53—55 of our third volume. It is well known that Mr. Cypher makes a speciality of this genus, and many of our readers will remember the two plants to which Cultural Commendations were awarded at the last meeting of the Royal Horticultural Society.

The series sent includes eight varieties of D. nobile; the well-known D. n. nobilius, with its very large and richly-coloured flowers, cœrulescens rather smaller but very similar in colour; Sanderianum, also very dark and with short broad segments; Cooksoni, with its lip-like petals; pendulum, with very large flowers about typical in colouring; Wallichii, with smaller flowers somewhat similar in colour; pulcherrimum, a beautiful white with purple-tipped sepals, petals and lip; and Cypheri with less purple on the tips of the segments, and the sepals light blush pink, especially on the back. Some of these were figured at page 113 of our second volume, and a complete list with descriptions was given a year later (pp. 147—150).

Of the hybrids between the preceding species and D. aureum are D. × Ainsworthii and its variety roseum, for the one called Cypher's variety seems sufficiently identical with this, which is said to have come

out of the same seed-pod as the original D. × Ainsworthii. There are also D. × Leechianum and D. × splendidissimum grandiflorum, two superb forms of the same hybrid. Of secondary hybrids are D. × melanodiscus and the beautiful D. × Rubens, the latter showing a very preponderating influence of the D. nobile parentage. Other plants enclosed are D. primulinum and D. × cheltenhamense, a very pretty hybrid between D. aureum ♀ and D. luteolum ♂, raised by Mr. Cypher, which well combines the characters of the two parents.

From the collection of H. Gurney Aggs, Esq., Pippbrook, Dorking, comes a series including the beautiful D. nobile albiflorum, and six brightly-coloured forms, the darkest being almost identical with the broad-petalled D. n. Sanderianum, and the others varying forms of the type not recognised as belonging to any of the named varieties. There is a considerable amount of variation in colour, especially among recent importations of this popular and useful garden plant.

## HYBRID PHRAGMIPEDIUMS.

An exhaustive account of the various hybrids of this genus was given at pages 75—80 of our third volume, under the title "Hybrid Selenipediums." It is, however, clear from the considerations given at pages 330—331 of our last volume that the name Phragmipedium must be adopted for this group, and the names of the species having already been given it may be convenient to indicate those of the nine primary hybrids between them which have been raised :—

| | Hybrids. | Seed Parent. | Pollen Parent. |
|---|---|---|---|
| 1. | P. × Cleola. | P. Schlimii. | P. Boissierianum. |
| 2. | P. × conchiferum. | P. caricinum. | P. longifolium. |
| 3. | P. × Dominianum. | P. caricinum. | P. caudatum. |
| 4. | P. × grande. | P. longifolium. | P. caudatum. |
| 5. | P. × Saundersianum | P. caudatum. | P. Schlimii. |
| 6. | P. × Sedenii. | P. longifolium.<br>P. Schlimii. | P. Schlimii.<br>P. longifolium. |
| 7. | P. × Stella. | P. Schlimii. | P. vittatum. |
| 8. | P. × stenophyllum. | P. Schlimii. | P. caricinum. |
| 9 | P. × unicum. (syn. S. × L'Unique). | P. Lindleyanum. | P. Schlimii. |

The names correspond to those of the earlier list above mentioned, except that the last-mentioned one has its name Latinised in accordance with rule. Varietal names are also omitted, both among the hybrids and their parents. Of this and other matters full particulars appear in the papers above mentioned. The various secondary hybrids may be indicated on some future occasion.

# CALENDAR OF OPERATIONS FOR MARCH.

By W. H. YOUNG, Clare Lawn, East Sheen.

THE temperatures of the warmer divisions should be gradually increased as the month advances, emphasising the word "gradually," and see that it be carried out, not adopting a course diametrically opposed to the one that has been in vogue during the last few months; for even if we have fine weather at the beginning of the month, we are not yet out of the wood, and so we should proceed to raise the temperatures, and adopt other well-known methods to produce animation in the plants in a very cautious and well-considered manner. With the Cool houses it will be necessary to still work upon the same principles as heretofore, viz., to make use of every method and contrivance at our disposal to do away with more than the requisite quantity of fire-heat; but as the days are likely to be warmer, more air can be admitted, which will neutralise to some extent the ill-effects of the fire-heat required to maintain the night temperatures. The direction and force of the wind, the position and design of the ventilators, have all to be taken into consideration when giving air. The best design for ventilators in the walls are those which work on a swivel, so that when it is only possible or necessary to admit a small quantity of air, it is deflected, and more likely to come into contact with the hot-water pipes before reaching the plants. Those in the roof, if on both sides, should at this season be only opened on the south side; but if the houses have been constructed as some here are, with the ventilators on the north side only (a sensible builder, this!), they should be used very sparingly, especially in windy weather. Shading will be called into requisition again soon, and as one does not know how soon that may be, the different kinds of blinds or other shading apparatus should be put into proper working order, not necessarily for immediate use, but for any emergency that may arise. Under normal conditions, the general occupants of the Cattleya and Mexican houses will not require shading until the end of this or beginning of next month, or the Dendrobiums, but Cypripediums, Phalænopses, Miltonia Rœzlii and vexillaria, Masdevallias, and other soft and thin-textured leaved Orchids will be sure to need a little protection from the mid-day sun if we are fortunate in having a bright and clear atmosphere over our heads.

In some cases new blinds will be needed, and the question will be forced upon our minds what kind of blind is the best; and if wanted for any house where Phalænopses, Cypripediums, Masdevallias, Miltonia Rœzlii, and other kindred subjects are not grown, there is only one answer to that question—viz., lath roller blinds. These undoubtedly are the best for Cattleyas, Lælias, Epidendrums, Dendrobiums, Odontoglossums, and hosts of other Orchids, as has been proved by more than one experienced Orchid-

grower during the last two seasons. Some doubted their suitability for use on the Odontoglossum house, as they were afraid the protection from the sun's rays would not be sufficient, but I can safely say from experience that no fear need be entertained of getting the leaves scorched. All blinds, of whatever description, should be raised from the roof glass six or eight inches, and this for several reasons. In the first place, if made of ordinary material, that lays flat on the glass, no air can gain admittance through the laps, and in very hot weather the glass is heated to such a degree that scorching of the leaves occurs, even though the plants are shaded. With the lath roller blinds, or others, when raised from the glass, there is always a layer of air between the glass and the blinds, which acts to a certain extent as a non-conductor of heat downwards, the which, in connection with the cool-growing Orchids, is a very great consideration. Where practicable, blinds of a suitable size should be made for the ends of the different houses, for use in preference to "stippling," as they are, in my opinion, much more beneficial than when a permanent shade is put on. Permanent shading of all descriptions cannot be too strongly condemned; also the practice of pulling the blinds down in the morning and leaving them down until the evening, no matter what the weather may be. Shading is for the purpose of breaking the power of the sun's rays, and not to darken the house inside, though, of course, there are some plants, such as the Anœtochilus, for instance, which must have somewhat dense shade, or they will not grow, but the few plants to which deep shade is an essential can easily be accommodated without throwing the whole house into a state of gloom.

It is the practice amongst growers to top-dress or repot plants of Miltonia vexillaria at or about the end of August, but in the neighbourhood of London it has been found more favourable to their well-being when the respective operations are performed in March or late in the preceding month, according to climatic conditions. If the plants were done last summer, and have prospered since, well and good, but where they were not as treated they should be done now as soon as possible, otherwise the flower-spikes will soon be showing, and if left until that happens harm might result. Few Orchids give a better return for the care bestowed on them than this, and, therefore, it is advisable to know how to get the best results. Repotting should only be done when the plants have overgrown their receptacles, or have from some cause or other become too small for the quantity of material around them. In either case the plants should be carefully taken out, and have as much of the decayed material and dead roots removed as possible without risk of injuring the living roots. Pots of just and only sufficient size should be used, filling these quite three parts with clean drainage, which, however, will probably have to be worked in around the plant after it has been determined how much space the ball

will occupy. Over the drainage should be placed a layer of moss, and then fill up with a mixture of half fibrous peat and sphagnum moss, mounting it up somewhat from the edge of the pot. In top-dressing those that do not require a fresh receptacle, it is only necessary to pick out with a pointed stick what decayed material is come-at-able, and replace with some of the above mixture. The plants should be watered sparingly through a "rose" for some time afterwards, more especially those shifted into other pots. They must also be shaded from strong sunlight, and given a temperature of about 60° during the day, and 55° to 58° at night, always keeping the atmosphere sweet and moderately moist by judicious ventilating and damping. Yellow thrips are very troublesome to these if allowed to gain a foothold, but since the advent of "Richard's XL.All" there has been no difficulty in that direction.

There are other well known and deserving Miltonias that should be seen to now, such as M. spectabilis, and its varieties atrorubens, Moreliana, &c., which from actual experience we find thrive much better in the Warm house than in an Intermediate one. They should have no moss about their roots, peat alone proving the best rooting medium for this section, as it is for M. Phalænopsis, and even this should be used in very moderate quantities, interspersing a few crocks to prevent the accumulation of too much material. The long creeping rhizomes having a scant supply of roots, it is rather difficult to fix the plants in position, but with a few pegs and a little tact the required result is soon accomplished. Having no moss and a greater proportion of drainage, water may be given more frequently than otherwise would be the case, M. × Bluntii Lubbersiana, a rare and handsome Orchid, should be grown in a pan hung at the warmest and shadiest part of the Cattleya house, given a fair amount of water during the growing season, but only sufficient to keep the material moist when inactive.

Thunia alba, Bensonæ, Brymeriana, and Marshalliana having laid dormant through the winter, are now proceeding to make a fresh start again, and as soon as the young growths are about an inch long the plants should be turned out of their pots, have all the old soil shaken away from the roots, and these being dead should be shortened, leaving a sufficient length to assist in the potting operation. The stem-like bulbs may be potted singly, or several placed in larger pots to make specimens, according to the taste of the operator. The pots should be half filled with drainage, placing a stake in the centre before filling in with crocks and the compost, as it is no easy matter to put a stake in afterwards. The compost should consist of three parts lumpy peat, one of fibrous loam, and the remainder of moss, pulverised cow manure and sand, mixing the whole well together, and allowing it to get warm before using. Having prepared the pots, place a layer of moss over the crocks and a little of the material; arrange the required number of

bulbs and tie to the stake, and fill in with soil, finishing off so that the bases of the young growths are level with, or a trifle higher than the rim of the pot. When completed they should be placed in a light and warm position in the East Indian house, syringed sparingly for a week or two, but giving no water otherwise until the growths have advanced considerably. They are very rapid growers, and soon fill the pots with roots, and consequently should not suffer for want of water when in full growth. When about to flower they may be placed in a lower temperature, and afterwards, if the weather be propitious, may be stood outside in the sun, to ripen their newly-formed bulbs, still giving abundance of water until the leaves fall away.

For beautifying our Orchid houses, or decorating (in a cut state) the drawing-room in the dull and cheerless days of winter, few Orchids can compare in usefulness with the deciduous Calanthes, especially when comprising such remarkably handsome and highly coloured varieties as are so well grown in the celebrated Burford Lodge collection. In the immediate neighbourhood of large smoky towns they are hardly worth their pot room, the flowers, if they survive until they expand, presenting a very washed-out appearance, owing to insufficient light. Nearly every grower has his own pet way of treating these, but, as far as my experience teaches, success depends more on the accommodation at command than in any particular compost or special mode of treatment. I have seen some very fine plants growing in rough loam and broken cockle shells, though certainly I should not recommend this as compost, but simply quote this as an instance to show that, given a good situation and the proper treatment with regard to watering, success does not depend on any particular kind of compost. A good way to start them is to shake all the old soil away from the roots, cutting the latter back to within two inches, and then pack them in a box on a layer of leaf mould, stand in a light warm spot, where they can be examined easily, and kept moist until the roots are sufficiently advanced to need potting. The compost may consist of two-parts peat to one of good fibrous loam, adding a sprinkling of powdered cow dung and sufficient sand or finely-broken crocks to render the whole porous. The pots should be half-filled with drainage, over which a layer of leaves or moss should be placed to keep it free from dirt. The bulbs may be grown either singly—say, one in a 48-sized pot—or three large or five smaller ones in a 32-sized pot. The material should be pressed firmly round the base of the young growths. Do not mound the soil above the pots, but leave a space below the rim for the purpose of holding water, and for top-dressing later on if the root action becomes extraordinarily vigorous. Calanthes delight in a hot and moist atmosphere, such as is usually found in a cucumber house, where they often do well if out of the way of the syringe in the early stage. For

some time after potting little or no water, given directly to the soil, will be needed; in fact, until the roots have taken a good hold of the material it is the better plan to immerse the pots to the rim in a pail of water, and then the water taken up by the crocks and the base of the soil will rise by capillary attraction to that above. Treating them as described, all will not be ready to do at the same time, for such as C. Regnieri and its varieties, also C. Turneri, will not commence to grow so soon as C. vestita, C. × Veitchii, &c. C. rosea is only worth growing for the sake of possessing it as a botanical curiosity or for hybridising purposes.

The hybrid Phaio-calanthe × Arnoldiæ requires different treatment from the above, as its roots do not die; hence repotting should only take place when needed through the soil becoming worn out, or from want of more room; also it must not be kept dry for long at a time.

The genus Phaius is not held in very great esteem by Orchid lovers, though, where room can be spared, a few plants of P. grandifolius, Wallichii, and the stately Sanderianus should be grown, as their character is so different from the generality of Orchids. If any of these require potting it should be done when the new growths have made some little progress, using a similar compost to that given the Calanthes, trying to secure the peat and loam in lumps, and mixing in at the time of potting pieces of charcoal and crocks. The shady side of the Cattleya house in most cases meets their requirements, as far as temperature is concerned. After being disturbed at the root, water must be given rather sparingly for some weeks, for if the soil be kept too moist the thick fleshy roots will perish.

Pleione lagenaria and Wallichiana will now be making headway, and should have all the light obtainable in the Cool house. A shelf at the warm end is about the best place for them, and water in larger quantities, and more frequently, should be given now root action is becoming vigorous. P. maculata succeeds best on a shelf at the warm end of the Cattleya house, but in other respects requires the same treatment. P. humilis, having only just gone out of bloom, should be repotted at once if in need of it, using pans filled to within an inch of the rim with drainage, and compost of two parts fibrous peat to one of fibrous loam, a little moss and sand. For about a fortnight after being done no water will be needed, but when it becomes necessary water may be applied over head in this instance, not so, however, with the others.

The thin-stemmed Epidendrums, such as Wallisii, Endresii, xanthinum, raniferum, radicans (rhizophorum), &c., should never be kept long without water. If any require more pot room (or less), or fresh peat and moss, it may be given now, and afterwards a bountiful supply of water. The coolest part of the Cattleya house, or a corresponding position in another house, suits the above species admirably.

For a month past Cœlogyne cristata has provided us with plenty of its chaste and beautiful white flowers. No Orchid can or does rival this for easy cultivation, quantity, quality, and purity of its blossoms. Large masses should have a thorough soaking as soon as the flowers are taken off, to assist in plumping up the bulbs after being kept dry during the time they have been in flower. Further details will be given next month. C. barbata has growths an inch or more in length, which will soon be emitting roots, and may with advantage have a little new peat and moss given it. It seldom needs repotting, although it grows over its receptacle, the creeping rhizomes can generally be pegged back upon the rooting material, thus obviating the necessity of repotting. Very little water will be needed yet. Coming into flower is the pretty dwarf compact-growing C. sparsa, which thrives when grown in pans in a mixture of peat, a little loam, and moss, suspended from the roof of the Cattleya house, and watered frequently when growing, but seldom when at rest. C. Massangeana and flaccida are now commencing to grow, and should, if occasion calls for it, be given fresh material composed of the above ingredients. They receive a similar treatment and occupy a relative position to C. sparsa, though teak-wood baskets are preferable to pans for hese.

The houses should now be damped down as soon in the morning as the minimum daily temperatures are reached, and again in the afternoon if evaporation of the former has taken place. Air should be given carefully and gradually, and in the case of the warmer houses may be taken off about two o'clock to preserve the beneficial effects of sunshine when we get it, taking care, however, to open the ventilators again to admit a little air during the night. The generality of the plants should be looked over daily to see if any require watering, but never water a plant if any doubt exists as to whether it is dry enough to stand in need of another supply, let it go for another day, for a day's drought will do much less harm to Orchids in general than a week during which the ball of the plant is in a sodden condition.

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THE second meeting of the year was held at the Drill Hall, James Street, Westminster, on February 9th, when there was a very good display of Orchids, from numerous exhibitors, and five plants secured an Award of Merit, while Cultural Commendations were given to two magnificent Dendrobiums from Mr. James Cypher.

Frau Ida Brandt, Brunnenhof, Riesbach, Zurich (gr. Mr. Schlecht), received an Award of Merit for Lælia anceps Kienastiana, a finely coloured

variety, with the front lobe of the lip and the edges of the side lobes of a bright deep rose shade. She also sent the rare Chondrorhyncha Chestertoni, Lycaste plana Measuresiana, Oncidium chrysodipterum, Odontoglossum cirrhosum, and some Phalænopses.

W. M. Appleton, Esq., Tyn-y-coed, Weston-super-Mare, sent two fine hybrid Cypripediums of his own raising, together with their parents, which were most interesting for comparison. They were C. × tessellatum (C. concolor ♀ × barbatum Warneri ♂) and C. × Quies (C. Curtisii ♀ × C. Hookeræ ♂). Both, it will be observed, have been raised before.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), showed a very pretty form of Cattleya Trianæ, with richly coloured lip, and a feathered purple blotch at the tip of the petals.

The Right Hon. J. Chamberlain, M.P., Highbury, Birmingham (gr. Mr. Burberry) sent two pretty hybrid Dendrobiums, D. × Burberryanum (D. Findlayanum ♀ × D. × Dominyanum ♂), the flowers tinted with rosy-purple, and an unnamed one from D. aureum ♀ and D. splendidissimum grandiflorum ♂, most like the former, but probably not yet fully developed.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), again sent the handsome Dendrobium × Kenneth, whose history is given at page 108 of our last volume.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Barrell), sent a fine form of Odontoglossum Harryanum with seven-flowered spike, Epipendrum Ellisii, Lælia glauca, and Lycaste gigantea with three flowers.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan) sent the pretty Dendrobium speciosum var. Bancroftianum.

The Hon. Walter Rothschild, Tring Park (gr. Mr. Hill) showed Cypripedium × Enid (C. bellatulum ♀ × C. Spicerianum ♂), a very singular hybrid raised in the collection, with white dorsal sepal closely dotted with dark purple; petals yellowish, densely dotted with purple; and the lip greenish tinged and speckled with purple. It clearly combines the characters of the two parents.

G. W. Law-Schofield, Esq., New Hall Hey, Rawtenstall, Manchester (gr. Mr. Schill), sent flowers of Dendrobium × Schneiderianum.

T. Statter, Esq., Stand Hall, Whitefield, Manchester, showed Cypripedium villosum giganteum, C. × triumphans, C. × Wootonii (C. bellatulum ♀ × C. callosum ♂), and a reputed cross between C. bellatulum and C. Rothschildianum, called C. × Rolfei, in which the influence of C. bellatulum was evident enough, but it was generally considered that C. × Leeanum must have been the other parent. Should this prove correct, we believe the plant has already been named, and the

name C. × Rolfei should be kept for the hybrid between C. bellatulum and C. Rothschildianum, of which, we believe, genuine seedlings are in existence.

T. W. Swinburne, Esq., Corndean Hall, Winchcombe, Cheltenham (gr. Mr. Rendal), sent Cypripedium villosum giganteum, C. × Swinburnei magnificum, C. × M. de Curte, and Odontoglossum Hallii leucoglossum.

Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. Young), sent a pretty group of cut Phalænopses, comprising P. Schilleriana and its rare variety vestalis, P. × leucorrhoda and its variety casta.

Reginald Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz) sent the remarkable Cypripedium insigne Youngiæ, described at page 35, C. × Lachesis, and others.

Messrs. James Veitch & Sons, Chelsea, staged a very fine group, to which a Silver Flora Medal was awarded. It contained Dendrobium × Cordelia, blush white with salmon-rose disc, and D. × C. flavescens, cream-yellow with brownish disc, yet both out of the same seed pod, D. × Cybele elegans, D. × euosmum roseum, and D. × e. leucopterum, D. atroviolaceum, a very good plant of the cinnabar-orange D. subclausum with over a hundred flowers, forming quite a picture, D. × Edithæ, Platyclinis glumacea var. valida, Epidendrum × elegantulum, Selenipedium × Schrœderæ candidulum, Epiphronitis × Veitchii, Phalænopsis Schilleriana, Lælio-cattleya × Pallas, Cypripedium × Leeanum var. Prospero, C. × Leonidas (C. villosum ♀ × C. × Leeanum ♂), and numerous other Cypripediums. An Award of Merit was given to each of the two following: Phalænopis × Hebe (P. Sanderiana ♀ × P. rosea ♂), a very pretty hybrid allied to P. × intermedia, of which a description appears on another page; and Lælio-cattleya × Violetta (Lælia purpurata ♀ × Cattleya Gaskelliana ♂).

Messrs. Linden, L'Horticulture Internationale, Brussels, received a Silver Banksian Medal for a group of eight good forms of Cattleya Trianæ, and a plant of Cochlioda vulcanica. Two of the former each received an Award of Merit, namely, C. T. Imperator, a fine form with dark purple lip, and C. T. eximia, a lighter form with very broad petals and well-developed lip, whose purple front lobe had a pale undulate margin.

Messrs. Hugh Low & Co., Upper Clapton, received a Silver Banksian Medal for a good group, including Dendrobium Hildebrandii, a fine D. H. oculatum, a form with a dark blackish blotch on the lip, a good form of the interesting natural hybrid Odontoglossum × Cookeanum, called Valentinei, Dendrobium nobile Ballianum, D. crassinode, D. Wardianum, D. primulinum, Lælia anceps varieties, Angræcum sesquipedale, two good Miltonia Roezlii, Odontoglossum Pescatorei, Cypripedium Exul, &c.

Messrs. F. Sander & Co., St. Albans, also received a Silver Banksian

Medal for a good group, comprising Oncidium splendidum, Lycaste Skinneri, a fine specimen of Pleurothallis Roezlii with eight racemes, one bearing eleven of its remarkable red-purple flowers, Dendrobium speciosum Bancroftianum, Phaio-calanthe × Brandtiæ (Phaius Wallichii ♀ × Calanthe × Veitchii ♂), six plants of Phaius × Marthæ, Paphinia Randii, some fine forms of Cattleya Trianæ, a very fine form of Odontoglossum sceptrum, and a number of good Cypripediums, including C. Chamberlainianum, C. × Calypso with ten flowers, a very fine C. insigne, &c.

Mr. J. Cypher, Cheltenham, showed two splendidly-grown Dendrobiums, to each of which a Cultural Commendation was given. They were D. × Ainsworthii roseum, a plant over two feet through and covered with flowers, and D. × splendidissimum grandiflorum, with pseudobulbs 3½ feet long, and very well flowered.

Messrs. B. S. Williams & Son, Upper Holloway, staged an interesting group, containing the handsome Pescatorea Lehmanni, Cœlogyne cristata, C. sparsa, a well-flowered Lycaste fulvescens, and L. Skinneri, Platyclinis glumacea, Lælia glauca, some good forms of Cattleya Trianæ, Oncidium Warscewiczii, Cypripedium × Fitchianum, C. × vexillarium, C. × Sallieri aureum, C. × politum, and various other good Cypripediums.

Messrs. Heath & Son, Cheltenham, sent a well-flowered plant of a fine dark form of Dendrobium nobile.

## DENDROBIUM WARDIANUM.

I SEND you two nodes of a flowering stem of Dendrobium Wardianum, to show how remarkably Orchid flowers may vary in size on the same plant and in the same season. I think this would have been material evidence if it could have been shown at a recent trial. I also think it is an additional proof, if one is wanted, how very much the system of giving varietal names to inconstant variations may be abused by Orchid growers. I might cut off the two lower flowers and sell this plant by sample for £2 or £3, while if I cut off the two upper flowers it would be worth as many shillings, and yet in both cases the buyer would have bought the same plant.

H. J. ELWES.

Colesborne,

Gloucestershire.

[This is a most remarkable example. The piece sent is the apex of a stem, with three nodes, the upper one being flowerless and the next having a raceme of two large flowers, and the lowermost another of two very much smaller ones. The large flowers measure 4¼ inches, from tip to tip of

the petals, and the small ones only 3¼ inches, while in the breadth of these organs, the development of the lip, and even in the length of the pedicels, there are corresponding differences, yet the two nodes from which they arise are equally stout, and only 1¼ inches apart. There is a starved appearance about the two lower flowers which is difficult to account for; even the disc of the lip is not so deep a yellow, and the purple tips of the petals are lighter in colour, and these we should consider not fully developed for some reason. The peculiarity may not repeat itself another season. —Ed.]

## ORCHID PORTRAITS.

Cattleya × Massiliensis.—*Rev. Hort.*, Jan. 1, p. 12, with plate.

Dendrobium nobile.—*Rev. Hort. Belge*, Feb., p. 25, fig. 8.

Dendrobium Wardianum.—*Rev. Hort. Belge*, Feb., p. 25, with plate.

Hemipilia amethystina, Rolfe.—*Bot. Mag.*, t. 7521.

Lælio-cattleya × Decia alba.—*Gard. Chron.*, Feb. 20, pp. 120, 121, fig. 34.

Lælio-cattleya × Lucy Ingram.—*Gard. Mag.*, Feb. 13, pp. 92, 93, with fig.

Lælio-cattleya × Nysa superba.—*Journ. of Hort.*, Feb. 11, pp. 118, 119, fig. 28.

Masdevallia coriacea, Lindl.—*Gard. Chron.*, Feb. 6, p. 95, fig. 27.

Maxillaria Sanderiana, Rchb. f.—*Bot. Mag.*, t. 7518.

Odontoglossum grande.—*Garden*, Feb. 13, p. 118, t. 1105.

Zygocolax × Veitchii.—*Journ. of Hort.*, Jan. 28, pp. 68, 69, fig. 19.

## CORRESPONDENCE, &c.

H. J. R., Florence. Æonia polystachya.

T. L. M., Florida. We hope to give an account of the group in question soon.

X. The only reason why the work is not noted is that copies are not sent. The reason why we do not enquire, but the remedy is very easy.

G. M. These hybrid Cypripediums of doubtful parentage are becoming a little bewildering. We should keep them unnamed until they are strong enough to show their real character, and then only keep the best. There are more names than really distinct forms already, but real improvements are steadily being effected.

Communications from several correspondents are unavoidably delayed.

Will correspondents kindly note that it is impossible to reply to everyone personally. As far as possible we endeavour to note all interesting things in our pages, in some form or another, and we shall be obliged if those who desire a reply by post will enclose a stamped and addressed post card.

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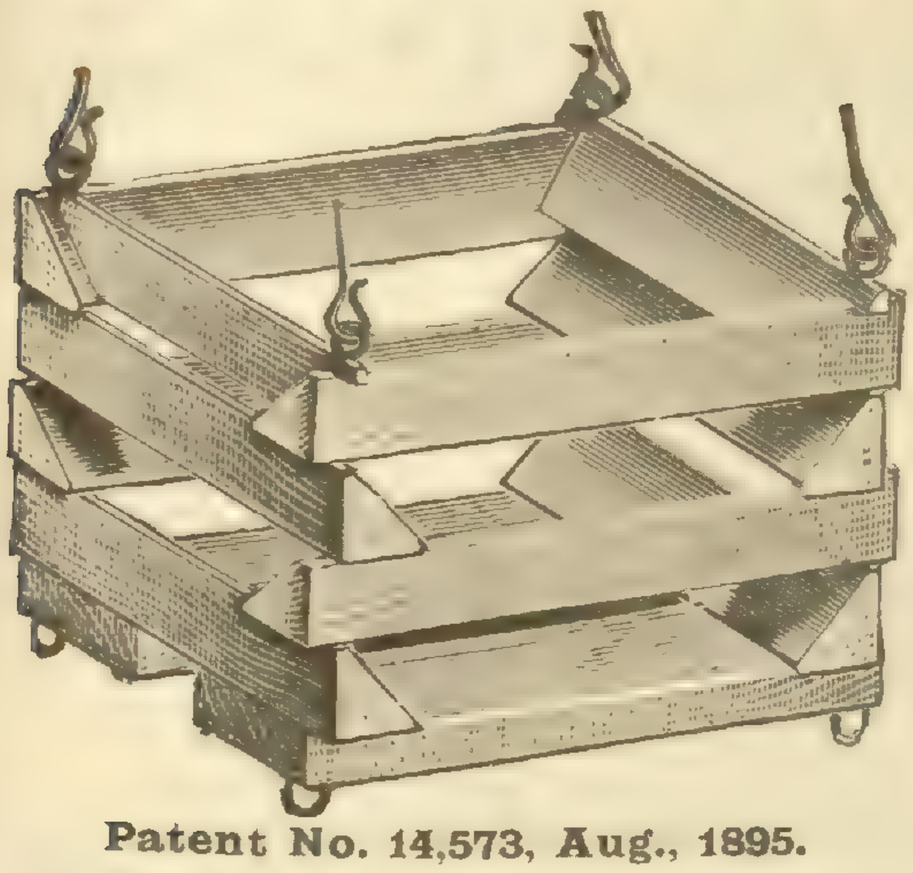

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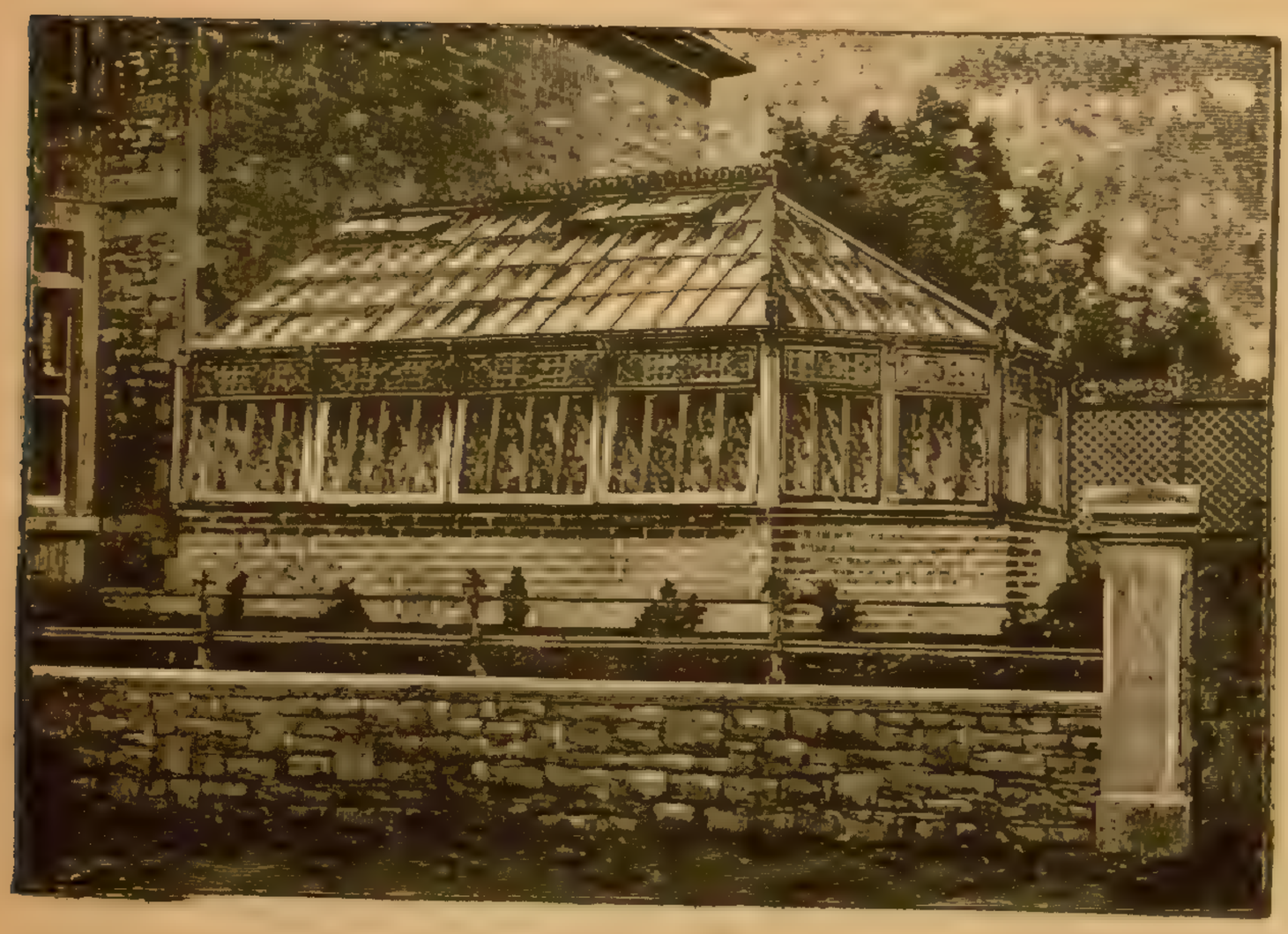

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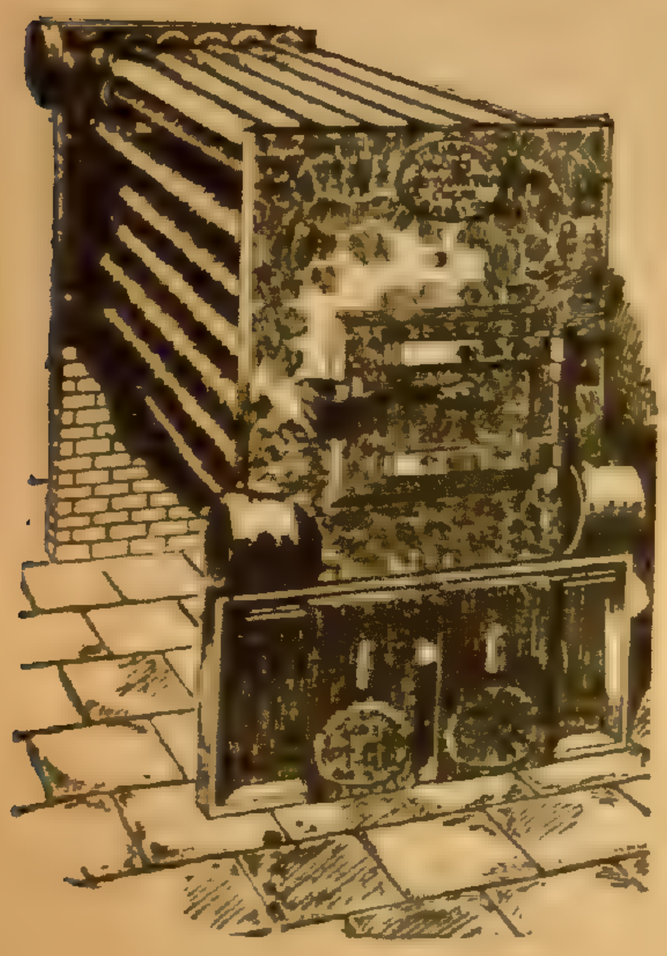

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Contents.


| | PAGE |
|---|---|
| Amateur's Notes ... ... ... | 102 |
| Calendar of Operations for April ... | 117 |
| Correspondence, &c. ... ... ... | 128 |
| Dendrobium Nobile ... ... ... | 104 |
| Dies Orchidianæ ... ... ... | 100 |
| Disa grandiflora, fertilisation of ... | 103 |
| Duplication of names again ... ... | 112 |
| Eulophiella Peetersiana ... ... | 101 |
| Fertilisation of Disa grandiflora ... | 103 |
| Hybridist ... ... ... ... | 110 |
| Dendrobium × Backhousei ... | 110 |
| Epicattleya × matutina ... ... | 110 |
| Lælia Longpipes ... ... ... | 112 |
| Notes ... ... ... ... ... | 97 |
| Obituary ... ... ... ... | 109 |
| Ricardo Pfau ... ... ... | 109 |
| Odontoglossum × Cookeanum ... | 99 |
| Odontoglossum crispum Golden Queen (Fig 6) .. ... ... ... | 113 |
| Odontoglossums at Walton Grange ... | 111 |
| Orchid Portraits ... ... ... | 128 |
| Orchid seedlings, the raising of ... | 114 |
| Orchids abroad and at home ... | 105 |
| Orchids at the Royal Horticultural Society ... ... ... ... | 123 |
| Renanthera coccinea ... ... ... | 116 |


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## NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during April, on the 13th and 27th, respectively, when the Orchid Committee will meet at the usual hour, 12 o'clock, noon.

A magnificient form of Oncidium Papilio has been sent from the collection of G. F. Moore, Esq., Bourton-on-the-Water, Gloucestershire. The flower measures over $5\frac{1}{4}$ inches in diameter across the petals, and the lip is over 2 inches broad, with a bright red-brown margin over half-an-inch broad. It is exceptionally fine.

A twin-flowered spike of Cypripedium × Youngianum superbum has been sent from the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne. It was raised in the collection, and Mr. Cookson considers it one of the best of the section, as it has the great advantage of being a very free-flowerer. It is exceedingly handsome, the dorsal sepal being over 2 inches broad and the petals $4\frac{1}{4}$ inches long by an inch broad—quite rivalling C. × Morganiæ, with the advantage of being more free-flowering.

A very pretty form of Cattleya Trianæ has been sent from the collection of H. A. Higgins, Esq., of West Kirby. It is much like C.T. Arkleana, figured at p. 81 of our last volume, but the petals are not so broad and rounded, and further differ in the presence of a bright purple blotch near the apex. The yellow blotches on the lip are nearly as much obliterated as in that, by the rich purple of the front lobe, and thus it is sufficiently identical with the variety Backhouseana. It is a small plant, flowering for the first time out of Messrs. Cowan's importations, and, good as it is, will probably yet improve.

A very fine Lycaste Skinneri alba is sent from the collection of Hamar Bass, Esq., Byrkley, Burton-on-Trent, by Mr. Hamilton, in which the lateral sepals are over two inches broad, and the other parts of corresponding dimensions. A light Cattleya Schœderæ enclosed shows equal luxuriance, as one of the petals measures fully three inches in diameter. These facts indicate the excellence of the system of culture adopted. The beautiful albino Dendrobium nobile Ballianum is also sent.

A very pretty light form of C. Trianæ is sent from the collection of Alfred Darby, Esq., Little Ness, Shrewsbury, which is almost, or quite, the variety pallida, the flower being uniform light blush, except the orangé disc. The plant is a good-sized one, and bears a dozen blooms, thus being very effective. A second light form enclosed has more colour on the front of the lip, but we do not quite recognise it.

A raceme of the beautiful Odontoglossum crispum roseum comes from the collection of D. M. Grimsdale, Esq., Kent Lodge, Uxbridge. The sepals and petals are rose-pink, the former being the darker of the two, the lip alone having a few small brown spots round the disc. The shape is very good, and the petals toothed.

A fine flower of Cypripedium Rothschildianum is sent by Mrs. Barton, Little Silver, High Bickington, N. Devon, from a newly-imported plant, together with a photograph of the plant, showing the three-flowered raceme, and a second one of two buds. The dorsal sepal is over $2\frac{1}{4}$ inches broad.

A flower of C. Victoria-Mariæ is also sent, showing how distinct it is from C. Chamberlainianum, in its differently-shaped lip, different colour, and more robust habit. A small flower of C. insigne is also sent, the first after importation, in which the petals bear numerous small spots, almost to the apex, so that its future behaviour will be watched with interest.

A flower of the beautiful Odontoglossum × Coradinei, Rosefield variety, has been sent from the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks. It is remarkable for having a large chestnut blotch above the middle of each petal, as well as on the sepals, the latter having one or more smaller ones near the base. It received an Award of Merit on March 24th, 1896.

A very beautiful form of O. × Andersonianum is also enclosed, both sepals and petals bearing many deep red-brown spots, those of the latter being smaller and more numerous. The ground colour is also lightly suffused with rosy-purple, more especially on the sepals.

A very curious flower of Odontoglossum crispum comes from the collection of J. Wilson Potter, Esq., of Croydon, in which the petals are united to the dorsal sepal almost to the apex, and thus pulled completely out of their normal position. It is the apical one of a raceme of ten flowers. A normal flower is also enclosed, a very pretty white form with a few small bright chestnut spots on the lip.

About 100 fine plants of Lycaste Skinneri are now flowering very finely in the collection of R. H. Measures, Esq., The Woodlands, Streatham, cultivated in yellow sandy loam, which evidently forms a highly suitable material in which to grow them. They are grown in 6—8in. pots, and in one case two pseudobulbs bear as many as 27 flowers.

Baron Sir H. Schröder, it is said, intends to send a selection of his beautiful Orchids to the Hamburg Exhibition in May, sufficient to form a group 55 square yards in dimensions.

A very fine, brightly-coloured form of Dendrobium nobile comes from the collection of Edward Hopper, Esq., Riverside, Morpeth, presumably out of one of the recent importations which have given so many fine closely-allied forms, some of which are known under the name of D. n. giganteum.

A two-flowered raceme of the beautiful Lælia × Latona has been sent from the collection of T. W. Thornton, Esq., Brockhall, Weedon. It is the form raised in the collection, described at page 150 of our last volume, and on comparison proves identical with that raised by Messrs. Veitch.

## ODONTOGLOSSUM × COOKEANUM.

A SECOND plant of this interesting natural hybrid has now appeared, which enables the doubts about its parentage to be set at rest. It was originally described from a single plant which appeared in the collection of Malcolm C. Cooke, Esq., Kingston Hill, to which an Award of Merit was given by the Royal Horticultural Society on November 14th, 1891. It came home with O. blandum, and was doubtfully suggested as a natural hybrid between that species and O. triumphans. The second plant was exhibited by Messrs. Hugh Low and Co., Clapton Nursery, on February 9th last, as O. × Valentinei, and though not absolutely identical is clearly a variety of the preceding. This particular plant came home with O. gloriosum and O. triumphans, and a careful comparison reveals such an unmistakable combination of the characters of these two species as to leave no doubt that it is derived from them. It has the general shape of O. gloriosum, but modified in the direction of O. triumphans. The markings also approach the former, though the colour much more nearly resembles the latter. It is very distinct and pretty.

## DIES ORCHIDIANÆ.

I READ the article by Mr. R. Thompson on the threatened extermination of Odontoglossum crispum in its native habitat, and the proposal to naturalise it in the mountains of Jamaica (*supra*, p. 45), with much interest, and shall watch the proposed experiment with curiosity. If the climatic conditions of the two areas coincide as nearly as pointed out, the experiment ought to be successful, if the plants have the necessary care until they have had time to establish themselves. It is confidently predicted that in the course of ten years scores of thousands of plants would be naturalised and fit for export annually. Some unforeseen contingency, however, may upset the nicest calculations, and in any case some years must elapse before Jamaica can be a source of supply for the European market, and as the orders for the present year will more than exhaust the stock remaining at Bogota—so the story goes—the outlook for the future is not a rosy one.

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The causes which have led to the rapid destruction of this beautiful representative of the wild flora of Bogota are pointed out, and, as usual, the "march of civilisation" seems to have worked most of the mischief, though the reckless felling of the trees on which the plants grow by collectors must not be overlooked. It would appear that ere long the land will be more valuable as Odontoglossum forests than when laid out as pastoral farms, and I would point out to all whom it may concern the advisability of establishing reserves in the best districts, where the plants could be protected, and by judicious collecting a constant supply might be maintained.

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It would appear that a little protection is all that is necessary—at all events, if the matter is taken in hand at once—for it is said that frequently when a clearing in the forest is made by fire, in rocky places, many thousands of plants spring up on these spots, but that they require about eight years to become strong plants. There is, at all events, the certainty that the climate and other conditions are suitable, and the necessary insects for fertilising the flowers are present, which remains to be proved in Jamaica. Perhaps someone out there will discover that Odontoglossum farming pays, and we may yet see them advertised "from our own celebrated farms." In any case, I suspect that we have not yet heard the last of this question.

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Here is that eternal nomenclature question again:—"Dear Argus,—You will agree that the Orchid Committee are making a very praiseworthy attempt to meet that awkward question of the duplication of names, by having a series of drawings made of the flowers to which Certificates are given, and the fact that they themselves agree to pay a third of the expense is an assurance that they recognise the necessity of some improvement. It

is a step in the right direction, but it does not touch those to which awards have been given in past years, and there is still a danger that these may be overlooked. A fair proportion, however, have been figured in various works, and the Committee might post these figures up in their Catalogue of Certified Orchids, if they cannot have copies of them made.—X." The suggestion is a good one, and the Committee might also obtain flowers from some of their previously certificated Orchids if the Society is willing to incur the expense of having them drawn. And I rather think that a complete series would provide some surprises, especially in the long list of Odontoglossum crispum varieties. I hope the Committee will follow up the suggestion.

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Looking over the report of the R.H.S. meeting for March 9th, I observe that four Cultural Commendations were awarded, against only thirty-five in the whole of last year. This award is one which I should like to see more frequently given, if only deserving objects were forthcoming. Being a recognition of good culture only, the conditions which govern the granting of other certficates do not apply, as, unlike them, it may be given to the same species more than once if the subjects exhibited deserve it, and consequently it is open to every grower to strive for. To obtain this award with a plant usually considered difficult to grow should be considered the highest test of cultural skill, and should be correspondingly sought after.

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I have no further information about the series of special prizes for 1896, to which I called attention at page 40. Can no one offer a suggestion as to what has become of them?

ARGUS.

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## EULOPHIELLA PEETERSIANA.

FURTHER particulars of this remarkable Orchid (*supra*, p. 68) can now be given, from a description by Dr. Kränzlin (*Gard. Chron.*, March 20th, p. 182). In size it is compared with a large Grammatophyllum, which it also resembles in some other respects. The rhizome produces many roots, which creep over the trees, and the stems vary from $\frac{3}{4}$ to $2\frac{1}{4}$ inches broad, and are covered by the persistent bases of the leaves. The dorsal sepal and petals are obovate, and the lateral sepals broadly linear or oblong, and united at the base. The side lobes of the lip are broadly oblong, the front one smaller and bilobed, and the disc bears a three-lobed callosity at the extreme base, in front of which extend some radiating nerves, the middle ones being enlarged into narrow triangular lamellæ. The size and colour of the flowers have already been described. The leaves are not known, but it is suggested that the plant discovered about five years ago by the late Johannes

Braun—who afterwards died at Antananarivo—may be the present species. It was said to be a giant Orchid not belonging to the Angræcum group, but two leaves only were sent home, which measured about two feet long. I am afraid that some time will elapse before living flowers are seen in Europe—at all events the Kew plant died without making any attempt to start, and it would be interesting to hear if any one has been more successful. It is evidently a remarkable Orchid.

R. A. R.

## AN AMATEUR'S NOTES.

SINCE my last notes were written the usual winter-flowering Orchids have made a brilliant show, and among them the variously coloured varieties of Cattleya Trianæ have taken a leading place, ranging from the normal rosy purple, through light blush, down to the charming C. T. alba. C. Percivaliana is a rather small but brightly-coloured species which always helps out the display at this season, together with the brilliant orange-coloured Lælia harpophylla, which has again flowered well. Equally brilliant is the good old Ada aurantiaca, which never fails to make a good show. Another fine old species is Zygopetalum intermedium, whose fragrant flowers last long in perfection, and being so easily grown in the Cool house, I consider it indispensable in an amateur's collection. Cœlogyne cristata and its charming varieties alba and Lemoniana have, as usual, been wreathed in flowers. Other occupants of the Cool house which have been very effective are Sophronitis grandiflora and Odontoglossum Rossii, while among those now in their beauty are O. crispum, Pescatorei, triumphans, constrictum Sanderianum, and the beautiful violet-coloured O. Edwardii, not overlooking examples of the hybrids Andersonianum, mulus, Wilckeanum, Coradinei, and excellens, all of them very charming. Lycaste Skinneri also cannot be overlooked.

In the Warm house are beautiful examples of Phalænopsis Schilleriana, Stuartiana, Aphrodite, and Lueddemanniana, also Eulophiella Elisabethæ, which is again flowering well. It evidently likes plenty of heat and moisture. Among the Dendrobiums, which are pre-eminently the plants of this season, there is a fine display of D. Wardianum, crassinode, the ever-welcome old D. nobile and some of its handsome hybrids, also examples of D. Hildebrandii, the pretty little D. Loddigesii, and several others.

Numerous other fine things are coming into bloom, and for the next two months the collection will appear at its best. There is a wealth of beauty among spring-flowering Orchids, and it is no wonder that these plants are becoming increasingly popular, for with a judicious selection a succession of flowers may be obtained throughout the year.

AMATEUR.

## FERTILISATION OF DISA GRANDIFLORA.

SOME recent information throws an interesting light on the fertilisation of the beautiful Disa grandiflora, which was formerly obscure. In 1864 Mr. Rowland Trimen, F.R.S., published a note on the subject (*Journ. Linn. Soc.* VII., p. 144), in which he observes:—"When I examined the plants, most of the flowers were partially withered; but in the greater number, even in those quite withered, both pollinia were still in their cases; in not one instance had both been removed, but in several flowers one had been carried away. In some of the withered flowers the pollinia protruded from the anther case; and in a few instances the upper sepal, in curling inwards, had touched the disc, and had drawn out the pollinium; but I saw no case in which the pollen-grains had thus reached the stigma. Considering how well-stored the nectary is with honey, it is surprising that the flowers are not more regularly visited; but as the nectar fills the lower part alone of the nectary, only insects with a long proboscis could reach it; and perhaps the larger moths are rare at the elevation at which this plant grows. The remarkably brilliant colours, however, of the flower probably indicate that it is attractive to some day-flying Hymenopterous or Lepidopterous insect. However this may be, the infrequency with which the pollen-masses are removed offers a nearly parallel case to that described by Mr. Darwin, of the extremely imperfect fertilisation of the Ophrys muscifera in England."

To this Mr. Bolus added (*Orch. of Cape Peninsula*, p. 88):—"Mr. Trimen has since informed me that he had never found any trace of insect agency. I have never seen a matured seed-vessel, nor been able to detect any insect employed in its fertilisation. On its native range of mountains it has a wide range of altitude, grows vigorously in dense masses, or at least several together, being apparently propagated exclusively by the formation of new tubers, and isolated plants (such as might be expected if it seeded freely) are rarely to be seen. Considering the brilliant colour of the flowers these facts are remarkable, and seem to point to the extinction of the insect by which this insect was originally fertilised. If we seek still further for the cause of such extinction, the suggestion might be hazarded that it may be due to repeated bush-fires, which some observers think may have been prevalent for a period long prior to the advent of Europeans in South Africa, and have played a very important part in the modification both of plants and animals in this region."

These observations were not very conclusive, and, as Mr. Bolus himself remarked, show little more than our ignorance. It is the more interesting, therefore, to learn from him that instances have since been observed of the visits of a butterfly (Menaris tulbaghica) to the flowers, and the consequent removal of the pollinia; and, although the fertilisation of this Orchid is rare,

so far as our knowledge extends, the fact that it occurs is pretty conclusive evidence that this is an effective means for the propagation of the species, as would *a priori* be expected from such a brilliantly-coloured, highly-specialised Orchid, which is incapable of self-fertilisation. Arrangements of this kind cannot possibly be meaningless, and it is most unlikely that the plant has now lost its use for them.

## DENDROBIUM NOBILE.

A TRULY marvellous specimen plant of Dendrobium nobile is now in flower at Hollin Hall, near Bradford, the residence of Mrs. G. Knowles; carrying 1,134 fine flowers. Five years ago when the present gardener, Mr. Moorby, took charge of the establishment, he found this plant in an 8in. pot, half starved, and the bulbs not measuring more than ten inches in height. By skilful treatment and a little advice he not only resuscitated the plant, but brought it up to the condition which is a credit to him. The plant is in a 14in. basket, measuring three feet in diameter, the longest bulbs 4ft. 6in. long, and last year it received an Award of Merit from the Bradford Paxton Society. It is quite evident from the foregoing that Orchids will grow and pay well in smoky manufacturing towns like Bradford, if they are properly attended to. The plant in question is growing with four smaller ones in a house devoted chiefly to tomatoes, and the aggregate number of the five plants amounts to 2,758 flowers.

Mr. Moorby admits his success is due to top dressing every year with fresh sphagnum and peat, thus keeping the compost fresh and sweet; another point upon which he lays stress, is the resting of the plants, at the right time, and by witholding water gradually; he never allows his plants to shrivel to any extent, and the beautiful foliage on last season's growth proves conclusively that his treatment is right. I have only seen two specimen plants approaching the one alluded to; they were exhibited five years ago at the Temple Show, and created a great deal of interest. I I never heard how many flowers each of these specimens carried; the exhibitor will perhaps enlighten the readers of the *Orchid Review* on the subject.

By way of conclusion I may add that there is also a very fine plant of Dendrobium Wardianum, with seven flowering growths, which to my knowledge has been in the possession or the late Mr. G. Knowles for over twelve years.

R. EICHEL.

# ORCHIDS ABROAD AND AT HOME.

Notes of a Lecture delivered before the Members of the Kew Gardeners' Mutual Improvement Society on December 7th, 1896, by Mr. R A. Rolfe.

*(Concluded from page 71.)*

We now come to the important question of food supply. An Orchid requires a certain amount of food, in order to build up its tissues, just the same as any other plant, but the best method of supplying this is not always an easy matter. Plants are unable to assimilate solid substances, and take up their food in a liquid state. When the roots are in the soil, they take up the water containing various substances in a state of solution, and it is easy to supply liquid manure; but in the case of plants with aerial roots it is a more difficult matter. Then again, many Orchids are generally supposed not to like liquid manure, though a few terrestrial species are undoubtedly benefited by its use. It is certain, however, that if any Orchid were planted upon a perfectly insoluble medium, cultivated in a pure atmosphere, and watered with distilled water only, it would speedily die from sheer starvation. The great question is, How do epiphytic species, whose roots are chiefly aerial, obtain their food? If this question could be answered satisfactorily, it would be a very easy matter to supply it artificially.

Among terrestrial species some are confined to a limestone or calcareous district, and will speedily die if removed to a non-calcareous soil, simply because one element of their food supply is absent. Others live chiefly upon humus, or decaying vegetable matter, which is easily supplied, in the form of peat or leaf mould. Swamp-loving species must be naturally well provided for in this respect, as the water in such places is always charged with decaying vegetable matter. Many epiphytic species grow among accumulations of dead leaves, or on the stems of tree-ferns, palms, or various dicotyledonous trees, and although the latter may seem a rather unpromising medium, it is certain that the necessary food is there, or is contained in the water which reaches their roots.

Aerial roots, however, in many instances are not attached to anything, the young absorbent apex being free in the air, and such roots evidently obtain their food from the moisture in the air and the gases it contains. The futility of pouring manure-water on to the compost in which such plants may be grown must be apparent. It might as well be poured about the floor of the house, or anywhere else in the vicinity, and this affords a clue to a possible means of supplying the necessary food.

It has often been remarked that the secret of growing many Orchids largely consists in supplying a suitable atmosphere—that is, one containing the proper amount of heat and moisture, according to the season, and prevented from becoming stagnant by suitable ventilation. Some cultivators

practice occasionally throwing manure-water about the floors at times when the roots are most active, and others throw down a mixture of lime and soot, which generates ammonia, and thus the air is charged both with ammonia and moisture, which, being absorbed by the roots, produces a more luxuriant growth. Mr. Cypher, of Cheltenham, sprinkles the floors with manure-water twice a week during the summer months, and also uses trough pipes, in which a little manure-water and soot is occasionally placed, and it is well known that he is one of the most successful growers of Dendrobiums in the country. Mr. Wrigley, of Bury, uses a mixture of lime and soot, and affirms that beneficial results are seen in the deeper green of the foliage, and certainly many of his plants are pictures of health. This seems to me perfectly rational treatment, for it is certain that ammonia as well as moisture is present in the air where Orchids grow naturally, and the very existence of aerial roots suggests this, otherwise they would not have departed from their ancestral habit of growing in the soil. It is clearly an adaptation for obtaining the necessary food in the modified conditions under which they live.

Some Orchids have both terrestrial and aerial roots, as Vanilla, and evidently both are concerned in obtaining the food supply of the plant. A somewhat similar modification is seen in certain Catasetums, Gongoras, and others, where numerous roots grow perfectly erect from the compost, giving the plant quite a curious appearance. There are examples of the former in the Orchid houses here, and Mr. Hart, of Trinidad, has published some interesting observations on the latter. "Gongoras," he observes, "like several other Orchids, have, when in good health, two classes of roots. First, the main, or clinging roots; and secondly, the upright, or vertical. These upright or vertical roots are found in Gongora, Coryanthes, Catasetum, and Epidendrum, and always commence growth during the moist season, having the green or growing point exactly vertical. On this point is to be seen in damp weather radiant globules of moisture. In dry weather the green and growing point entirely disappears, by gradually tapering away into a needle-shaped point, when it becomes covered with the white covering common to the clinging roots, and becomes practically non-absorbent. These roots are similar to those exhibited by mangrove and other swamp plants. If the surroundings to lagoon plants are examined closely it will be found that, proceeding from the roots that are below the surface of the mud, there are countless thousands of tips that are exactly perpendicular. That these roots perform some function, important both to Orchids and to mangroves, &c., is clearly apparent, as where they are most abundant the plant and the tree is most vigorous and in the most robust health. But what that function is exactly is not clear to us, but the feature is such a notable one that it is deserving of further close enquiry."

I had frequently examined these vertical roots at Kew, but was unable to account for the peculiar arrangement. The case of mangrove, however, where the main roots are in the water or mud, suggests the probability that they are developed in order that the plants may feed on the gases in the air, and Orchids might find a similar benefit in getting away from the accumulations of vegetable matter in which they grow into the free air. The vertical arrangement may be partly due to the roots acting as condensers of the water in the air, and thus collectors of the gases present, and as the young absorbent point is at the apex it is in a position to benefit immediately. This is suggested as a possible explanation, but in any case, it is evident that these vertical roots have the same function as those much-branched aerial roots of Rodriguezia, Ionopsis, and other Orchids, which obtain their food entirely from the air, not being in contact with any other substance whatever. Here again we see the importance of imitating natural conditions, for such roots will not remain in the compost, but will grow out again as often as placed there.

Certain aerial roots contain chlorophyll, or the green colouring matter of leaves, without which nutrition of the plant cannot be carried on, and the roots of those curious leafless Orchids, previously mentioned, show a remarkable change of function in this respect. First comes the change from an ordinary root to the modified aerial condition, and then the development of chlorophyll, by which the plant is able to assimilate its food and thus dispense with ordinary leaves altogether. In these plants aerial roots have not only to collect the food of the plant, but to assimilate it too, and in this they succeed very well, for examples are found in each great tropical area—certain species of Angræcum in Africa, Dendrophylax and Campylocentrum in America, Tæniophyllum and Sarcochilus in India and Malaya. A species of the latter genus, S. luniferus, succeeds very well at Kew, and flowers every year.

So much for the question of food supply, which is certainly a very important one. I believe that some Orchids which under cultivation gradually dwindle away are literally starved to death. The necessary amount of food is either absent or is supplied in a form which they cannot assimilate, either of which must be fatal in the end. The inflorescence of certain Orchids, as well as the bulk of the plant, seems altogether disproportionate to the amount of compost used, and this of itself suggests the probability that much of the food is absorbed from the air or from the water supplied. Rain water is invariably recommended for Orchids rather than spring or well water, and although the presence of lime in the latter is often assigned as a reason, it may be partly due to the presence of ammonia in the former. Layers of oak and other leaves are put under the stages by some growers, and sprinkled with water occasionally, and it is easy to see how the gases given

off by the decaying leaves may benefit the plants, as well as the utility of damping down occasionally with manure water, or the use of lime and soot to generate ammonia, when growth is active. As already remarked, the development of aerial roots by the plant is a provision for obtaining the necessary food from the air, instead of from the soil, and cultural conditions have to be modified accordingly. In fact we have long ago discovered that epiphytes have to be treated with some regard to their peculiar nature.

These various facts, I think, will show the utility of a knowledge of the conditions under which any plant grows in a wild state, and the importance of imitating them in their essential character. Many intelligent cultivators recognise this—in fact the late Mr. John Day is said to have travelled with the express object of observing some of the conditions under which Orchids grow in their native homes—and some of those who boast of the superior value of what they call practical knowledge are all the time imitating certain of the very conditions, a knowledge of which they profess to consider as of such little importance. The fact is the success with which many Orchids are cultivated at the present day is largely due to an intelligent application of the hints which have been supplied by collectors and travellers as to how and where these plants grow in a wild state. It is not the slavish copying of every trivial condition, many of which are purely accidental and non-essential, but a knowledge of what conditions are essential, and how to apply them or modify them to suit the artificial conditions under which they are grown in our houses, that is the important matter. I have heard it remarked that this is all very well in some cases, but there are Orchids which will grow best in houses or under conditions which theoretically they ought not to. This, however, I do not believe, and consider that such cases only prove our theories to be erroneous, or more correctly our knowledge to be imperfect. A few Orchids may be more luxuriant under cultivation than usually seen in a wild state, but this is due to a superabundant food supply, and the unremitting care bestowed on them by the cultivator—in short, to protection from the struggle for existence.

Lastly may be considered how these questions affect the Orchid collector. Complaints are sometimes made that collectors of new Orchids seldom furnish any information which is of the slightest use to the cultivator, and these complaints are not made without good reason. In some cases collectors themselves know very little, as they often buy the plants of the natives, without seeing them growing, and when they could impart useful information they often withhold it for fear some rival may use it to his own advantage. But I think every necessary item of information, such as habitat, soil, temperature and amount of moisture required, could be supplied without divulging the locality in which a showy new species has been found, and such information I think they ought to give. As it is growers are usually left to find out

the proper treatment for themselves, and to their credit be it said they often succeed, though not invariably, and some refuse to purchase a new plant which they know nothing about, because of the uncertainty of how to treat it. Frequently the plant itself affords a clue, as in the recent case of Eulophiella. It cannot be said that growers suffered from a lack of information about this plant, but rather from a superabundance of it, such as it was, though unfortunately it was of little practical use. On examining the imported pieces, however, with Mr. Watson, we discovered the remains of tree-fern fibre, and knowing the locality to be Madagascar, it was agreed that the treatment applied to Phaius tuberculosus was likely to be suitable. The plants were accordingly put in baskets and suspended over a tank of water in a hot house, and with the most successful results. Others, however, were less fortunate, and I should say because the treatment they gave was different from that in which it grows in a wild state.

I think I have now shown that a knowledge of the conditions under which Orchids grow in a wild state is of great practical importance to the cultivator, and that an intelligent application of them has transferred many of them from the list of intractables to those which may be cultivated successfully from year to year, and I am fully convinced that there is not an Orchid in existence which could not be cultivated successfully if these conditions were imitated so far as their essentials are concerned. The difficulty is that some of these conditions can hardly be reproduced artificially, but a recognition of the principle will save the cultivator many troubles when once he has made up his mind to succeed, and will doubtless remove many other beautiful Orchids from the list of intractables in the future.

## OBITUARY.

We regret to hear by mail, just as we go to press, of the death of Mr. Ricardo Pfau, of San José, Costa Rica, on March 14th. His illness was an affection of the throat, and his last days were ones of great suffering. Mr. Pfau will be known to most of our readers as a grower and importer of Orchids, and we may recall the interesting article by him on the "Fertilisation of Orchids in the Tropics," given at page 295 of our second volume. Mr. Pfau was in England some few months ago, and promised some further observations on Costa Rican Orchids, a promise which, unless he has left some notes on the subject, cannot now be redeemed. Mr. Pfau has been a constant reader of the *Review*, and one of his last requests was that the inevitable termination of his illness should be communicated to us.

## THE HYBRIDIST.

### DENDROBIUM × BACKHOUSEI.

MR. CYPHER has sent me some further particulars about the interesting hybrid Dendrobium described at page 76. It was raised by Messrs. James Backhouse and Son, of York, from D. nobile ♀ and D. thyrsiflorum ♂, the cross being effected in April, 1890, and the seed sown in the following year. One small plant is said to have flowered last year with Messrs. Backhouse. The one described last month from the collection of G. F. Moore, Esq., is said to show the influence of the pollen parent distinctly in habit, as well as in the light yellow tint suffused through all the segments, although the characters of D. nobile decidedly preponderate. Whether it will ever develop the racemose character of D. thyrsiflorum remains to be seen, but we would suggest that the reverse cross should be attempted; also that D. thyrsiflorum might be crossed with the pollen of the present one, as the difficulty which has been found in crossing the two sections of the genus might thus be diminished. D. × Backhousei is certainly a most interesting hybrid, and the qualities of its parents afford an indication of what it will develop into.

Referring to our enquiry at page 76, S. G. Lutwyche, Esq., Eden Park, Beckenham, writes that he knows of another hybrid between the two sections of the genus, *i.e.*, D. densiflorum × D. nobile. The plant is probably strong enough to flower this season, and he hopes to be able to send a note respecting it, and also a flower, if he can procure one. This record would indicate D. densiflorum as the seed parent, which is interesting, as it belongs to a section which has proved difficult to hybridise. A similar remark, however, would apply to the record of the preceding given last month, which has now to be amended. Records sometimes get transposed in passing from hand to hand, especially if one trusts to memory, and we may remark in passing that in writing down a record of parentage in this way the name of the seed parent should invariably be placed first, when it explains itself.

### EPICATTLEYA × MATUTINA.

THIS is a most interesting hybrid, raised by Messrs. James Veitch and Sons from Cattleya Bowringiana ♀ and Epidendrum radicans ♂, and exhibited at the Royal Horticultural Society's meeting on March 23rd. The plant has the erect, reed-like habit of the pollen parent, and flowers about two inches in diameter, yellow tinged with vermillion. In one form the lip was ovate and irregularly notched, but in another more trilobed, approaching the pollen parent. It is curious to note the greatly preponderating influence of the pollen parent, which is also seen in the case of Epiphronitis × Veitchii, and it would be a most interesting matter if the reverse cross were

attempted, so that the results could be compared side by side. We would suggest as a possible explanation of this curious character that both Cattleya and Sophronitis are derived from an Epidendrum-like ancestor, and that the most recent or least fixed characters of the parents are the ones most easily lost when hybrid unions are effected. This is apparently the first genuine Epicattleya, for E. × guatemalensis is now referred to Cattleya.

## ODONTOGLOSSUMS FROM WALTON GRANGE.

A SERIES of very beautiful Odontoglossum flowers has been sent from the well-known collection of W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens). Among them is the beautiful O. × Ruckerianum ocellatum, which received an Award of Merit on March 23rd last. The sepals and petals are beautiful rose-pink, with numerous red-brown spots and small blotches, and the lip yellow with a large irregular red-brown blotch in front of the crest. The plant when exhibited bore a raceme of nineteen flowers, and was a beautiful sight, as both form and colour are excellent. There are also three forms of O. × excellens, one of them being specially interesting because it was raised in the collection, between O. Pescatorei and O. triumphans, and would have proved the parentage of this natural hybrid had not this been previously accomplished by Messrs. Veitch, and afterwards by Messrs. Heath. This seedling is now flowering for the first time, and is a little paler and nearer to O. Pescatorei in general character than many forms of this hybrid. A second light form, called O. × excellens var. spectabile has very broad light yellow sepals and petals, the latter with numerous very small dots near the base, and the former with several large brown blotches. The third is about typical, with very deep yellow ground colour. A good form of O. triumphans, one of the parents, is also enclosed. O. × mulus lyroglossum is a striking form with light ground and very large blotches, those on the petals taking a crescent shape. O. × mulus cuspidatum is a well-known, heavily-marked form. O. × acuminatissimum is a very rare and interesting hybrid, derived from O. luteopurpureum and O. Lindleyanum, in which the influence of the latter is apparent, both in the column, with its wings, and the lip. O. luteopurpureum pallens is peculiar in its very light yellow ground, with light red-brown markings. Lastly may be mentioned two very good nearly white forms of O. crispum, with a few small spots only on the lip. The series is very interesting and beautiful.

## LÆLIA LONGIFES.

In a recent number of the *Dictionnaire Iconographique des Orchidées* appears a figure of the above imperfectly known species, which was described by Reichenbach in 1863, from a dried specimen collected in Brazil, by Sellow, as Bletia longipes (*Xen. Orch.*, II., p. 59), with the name Lælia longipes, Rchb. f. Mss., given as a synonym. The only known specimen was in the Berlin Herbarium, and the plant was not known in cultivation. Recently, however, M. Fournier, of Marseilles, obtained a plant under the incorrect name of Lælia crispilabia, which M. Cogniaux has identified with the above, and from a comparison with the original description I am convinced that he is correct; but it is quite evident that my Lælia Lucasiana (*Orch. Rev.*, I., p. 265), represents the same species, and I may mention that the earlier name and description was completely overlooked when the latter was described. The figure in question represents a plant with white sepals and petals, but it agrees in every other respect, and as the ordinary forms are more or less coloured it is evidently an albino of the species, for which the name L. longipes alba will be suitable. Of course, the earlier name must be retained. There is very little further to add as to the history of the species, for although a good many plants are in cultivation it does not appear to have become very well established at present, though a few people have flowered it very well, and I believe that a figure will appear in an early number of the *Botanical Magazine*.

R. A. Rolfe.

## DUPLICATION OF NAMES AGAIN.

At the meeting of the Royal Horticultural Society on January 12th, a hybrid from Cattleya intermedia ♀ and Lælio-cattleya × elegans Turneri ♂ was exhibited by Mr. C. L. Ingram, under the name of Lælio-cattleya × Regina. On January 14th, 1896, the Orchid Committee gave an Award of Merit to the same gentleman, for the same hybrid, under the name of Lælio-cattleya × Cicero. On February 9th last Messrs. James Veitch and Sons showed a hybrid from Lælia purpurata ♀ and Cattleya Gaskelliana ♂, under the name of Lælio-cattleya × Violetta, and the Orchid Committee recognised the name by granting an award of Merit, although on June 25th of the previous year they gave a First-class Certificate to the self-same hybrid when exhibited by Messrs. Sander, and it was also described in your pages (III., p. 243). It would be interesting to know under which they would prefer that this hybrid should in future be known.

Highbury,
Birmingham.

J. Chamberlain.

## ODONTOGLOSSUM CRISPUM GOLDEN QUEEN.

THE accompanying illustration represents the beautiful Odontoglossum crispum Golden Queen, from the collection of W. Thompson, Esq., Walton Grange, Stone, Staffs., to which an Award of Merit was given by the Royal Horticultural Society on November 14th last, and which caused the discussion detailed at page 73. Mr. Crawshay seems to be of the opinion that this plant is a hybrid, and if not actually a form of O. × Wilckeanum, at least one which owes its characters partly to the influence of O. luteo-purpureum, derived by secondary crossing. In forming this opinion he was evidently influenced by the colour, and perhaps to some extent also by the

Fig. 6. ODONTOGLOSSUM CRISPUM GOLDEN QUEEN.

spots. I, too, at the first glance thought it to be a form of O. × Wilckeanum, but gave up the idea on failing to find any of the characters of O. luteo-purpureum in the shape of the column wings and lip, with its characteristic crest. How far this is the case can be seen in the figure, which is a faithful record, as revealed by the camera, though the base of the crest, being in the shade of the column, does not come out so clearly as the front. The shape of the flower generally is that of O. crispum, and the colour bright golden yellow with red-brown spots, the latter being of a shade which might be given by O. c. Stevensii on a yellow ground. It might possibly be suggested that this is an example of a hybrid which has taken the shape of one parent,

the colour alone being modified, but, so far as I know, all forms of O. × Wilckeanum show distinct traces of O. luteopurpureum in shape. What a secondary hybrid derived from O. crispum again crossed with O. × Wilckeanum would be like can only be approximately inferred, but I should be surprised if it gave the brilliant colour of the present one. Now that O. × Wilckeanum has been artificially raised, as well as other Odontoglossums, it would be interesting if someone would attempt the above-suggested cross, for the result could not fail to be very instructive and interesting.

R. A. R.

## THE RAISING OF ORCHID SEEDLINGS.

By R. EICHEL, Bradford.

*(Continued from page 84.)*

THE erect growing varieties of Epidendrum are easily raised from seed; Wallisii, radicans, and Endresii have produced hybrids, which probably may have a great future in store, if they can be induced to cross with Lælias and Cattleyas, a problem which is now being experimented upon. The charming bigeneric hybrid Epiphronitis × Veitchii has opened the eyes of hybridists, and is, doubtless, in no small measure responsible for the experiments which are being made in various collections. Epidendrum Wallisii is a very good producer of hybrids, one of the offspring, × Endresio-Wallisii, has been used again as pollen parent, and produced the much admired E. × elegantulum. E. Frederici-Gulielmi is another species which can be highly recommended; the free growing habit of the plant, together with its floriferousness, cannot fail to attract attention.

Epidendrum vitellinum is a subject of very great importance, the beautiful colour is a matter of no small consideration, though I confess the flowers are most difficult to fertilise, and the seed still more difficult to raise. Eighteen months ago Mr. G. Marchetti, Manor Heath, Halifax, obtained a seed-pod of E. vitellinum crossed with Odontoglossum crispum. I examined the seed very carefully with a powerful magnifying glass, and found a large percentage of good seed, which, being sown in various ways and under various conditions, appeared to go on well. Two months later I saw the seed again, some of them swelling beautifully and turning green. I am afraid, however, that since the collection has been dispersed Mr. Marchetti has not taken the same keen interest in them as formerly. This cross interested me very much, and the facts are well worth recording; though it would have pleased me more to record the flowering of such an extraordinary mule.

Epidendrum radicans is a fine subject for the hybridist, and the large head of beautifully coloured blooms, flowering almost the whole year round, should prove of enormous value. The plant is a good seed-parent, and hardly ever fails in producing good seed. Epidendrum ciliare, despised by most Orchid growers and relegated to the rubbish heap, is worthy of a little more attention from the hands of the thoughtful operator; the flowers are greenish white with a fringed lip, deliciously scented, and can only be fertilised with success in the evening, when they begin to emit their fragrant perfume; a wrinkle given me by the late George Beddoes. A pretty and particularly interesting hybrid has been raised by Mr. Jolly, gardener to Baron Nathaniel Rothschild, between E. ciliare and Lælia anceps, and named Epilælia × Hardyana (*Orch. Rev.*, II., p. 364). [E. × Wallisio-ciliare (*l.c.*, III., p. 14), raised by Messrs. Veitch, is also a very promising hybrid.—Ed.] Epidendrum aurantiacum, E. Cooperianum, and E. prismatocarpum are species which may prove successful combinations, and it is highly desirable that attention should be drawn to such beautiful coloured and free-flowering plants, not with a view of obtaining a great advantage at once, but for the stepping stone to something better, which is sure to follow ere long.

The appearance of Cymbidium × eburneo-Lowianum and C. × Winnianum has stimulated the energy of the hybridist to improve the existing species, and no doubt there is any amount of scope. What a glorious cross will C. eburneum produce with C. Hookeri and C. Traceyanum, or Lowianum concolor with eburneum? Will the white and green flowers produce pure white progeny or revert? A very interesting question. Cymbidiums, as a rule, are good seed-bearers and germinate quickly, peat and loam seems to suit them admirably, though, as remarked previously, they are not very particular in the choice of their seed-beds, and require little attention.

Calanthes have produced some good useful progeny. The handsome Calanthe × Baron Schröder is, perhaps, the darkest and best known hybrid. Norman C. Cookson, Esq., has enriched our collections with several choice seedlings, such as Harold, Sybil, and Bryan, and Messrs. F. Sander & Co. exhibited recently C. × albata (C. veratrifolia ♀ × C. × Cooksoni ♂), the first successful cross between the evergreen and deciduous section of the genus. They appear to be very quick growing, reaching the flowering stage in comparatively short time; the seed should be sown on good fibrous loam mixed with a trifle of good peat and sand.

Phaius seedlings grow under very similar conditions, and need only a little assistance when growing too thickly on the seed-beds. On several occasions I have seen Phaius seedlings as thick as the proverbial mustard and cress, and it appeared to me a case of the "survival of the fittest" if aid

was not quickly forthcoming. Phaius × Owenianus, P. × amabilis, and P. × Marthae are striking examples of the hybridist's skill, and if intercrossed with some of the brilliant-coloured Calanthes, they should prove a welcome addition to our stock of garden hybrids. And as they are so easily raised and so quickly reach the flowering stage, there is all the more inducement to take them in hand.

Masdevallias are rather difficult subjects to deal with, though Captain T. C. Hinks, Terrace House, Richmond, Yorks, has been very successful in raising some beautiful hybrids. Several times I had the pleasure of having a chat with the gallant Captain while he lived at Breckenborough, near Thirsk, and admired how skilfully he manipulated these tiny seedlings, scarcely visible to the naked eye. The seed is very small indeed, and should be carefully watched, lest it should disappear. A controversy with a friend led me to make an experiment lately, to raise the seed in heat, though I feel convinced a cool or slightly intermediate temperature is more suitable. Masdevallia Veitchii, M. Harryana, M. ignea, M. Shuttleworthii, and M. tovarensis are responsible for our best garden hybrids. Is it possible to fertilise M. Harryana or Veitchii with the Chimæra section? is a question I have often been asked. My experience leads me to believe it is not feasible, though I may be wrong. However, cases have been recorded where M. Harryana and M. Lindeni have been fertilised with the pollen of M. bella (*Orch. Rev.*, II., p. 18 and 262), and in one case seedlings have been obtained. No doubt the successful raiser will watch these seedlings with the greatest possible interest.

Sophronitis grandiflora has come in lately for a good share of attention, the variety named coccinea appears to be the best for hybridising purposes. As a rule the plant is a fair seed-bearer, but the seed when sown requires infinite attention. In fertilising a Sophrontis flower the pollen of a Cattleya or Lælia should be carefully cut to fit the stigma, while the pollinia of several Sophronitis flowers are required to fertilise a Cattleya or Lælia bloom.

*(To be concluded.)*

## RENANTHERA COCCINEA.

This quaint and interesting Orchid is now in bloom with us. The plant is bearing sixty blooms on a five-branched raceme, which are of a bright brick-red colour. It is the more interesting because of its peculiar mode of growth. Our plant is climbing a pole about nine feet high—*a la mode de Speed de Chatsworth*—and is growing in a span-roofed structure, 40 feet by 20 feet by 11 feet, and this where the temperature during the continuous winter of

1894-5 frequently fell to 35° Fahr., the house being fully exposed to the east. Up to two years ago I grew the plant in a small stove, where it was exposed to the sunlight as much as possible; but not being satisfied with the progress it made, it was placed at the cooler part of an intermediate house, which was in use for exhibiting all kinds of soft-wooded plants, including Orchids. I find that to be well wetted with the syringe three times a day in summer and once in winter accords with its requirements. The progress made during the past two years by the plant in the intermediate house has been rapid, and the foliage is leathery and healthy-looking. Doubtless many plants of Renanthera are grown in too much heat, and if those gardeners who have more than one plant would try one or two in a temperature of 50° to 60° in winter and 70° in summer they would be well satisfied with the results. By the way, have any of our Orchid hybridists taken Renanthera and Vanda in hand? In case any of them require pollen masses to experiment with I should be pleased to give it.—W. J. Grace, Bickton, Fordingbridge, in *Gard. Chron.*, Feb. 27th, p. 134.

## CALENDAR OF OPERATIONS FOR APRIL.

By W. H. Young, Clare Lawn, East Sheen.

We may now safely assume that the rigours of winter are past, and that although we may, and probably shall, have cold weather, more especially in conjunction with piercing cold east winds, we shall also get some beneficent flashes of sunshine, thereby lessening the severity of the cold. The temperatures of the warmer houses should still be further increased, and air admitted more freely, yet with due caution, always considering the direction and force of the wind. The top ventilators will be needed very little yet awhile, and when they are used should be closed early, as indeed they all may be about half-past two, when the houses are damped down; again opening the bottom ventilators before leaving off for the day. The Cool houses should also be damped early in the afternoon, and again before leaving off if necessary, but the ventilators should always remain open, more or less, according to the prevailing conditions outside.

Shading will now be generally necessary, first on the coolest houses to serve the double purpose of protecting the plants from the sun, and to prevent, to a certain extent, an undesired rise in the temperature. The Warm houses containing soft-leaved subjects, such as Cypripediums, Phalænopses, etc., must also be shaded early in the day when the sun is shining, leaving those containing Cattleyas, Lælias, Dendrobiums,

Catasetums, etc., until last, reversing the order of procedure when taking the shading off in the afternoon.

Potting, re-surfacing, and other associated operations will now become numerous and general, and the wished for success will, to a great extent, depend on when and how the respective operations are performed, it being a well-known cynicism that one has only to pot an Orchid in the proper material, at the right time, place it in a suitable position, treat it aright, and it will succeed; and who can gainsay it? But there is also an old saw which says, "It is easy to talk, but *to do* is the thing," and that is where the difficulty lies. With regard to the question, When ought an Orchid to be potted? we may conclude that it is a pretty safe rule to follow, to repot, or give new material, immediately new roots appear from the base of the last made bulb or rhizome, but to say how it ought to be done cannot now be given in detail, but will be treated of as we go along.

One of the first subjects to be performed upon this month is the grand old Cœlogyne cristata and its different varieties. The flowering season having gone by the plants are commencing to grow again, and any that need making up anew should be done at once. These grow and thrive a long time without being repotted or top-dressed, and where there are a number of specimen plants, one or two should be done annually, so that a loss of a season's bloom will not be felt. Those selected should be turned out of their receptacles and carefully pulled to pieces, each separate growth having four or five bulbs, and as many roots as it is possible to save. Pans of a suitable width and depth should be filled to within two inches of the rim with clean drainage, over which place a good layer of rough moss. The compost ought to be prepared a day or two previous, and should consist of one half good fibrous yellow loam, to one half of lumpy peat, a little moss and sand—or, better still, finely broken crocks—being added to keep the compost open. As it is advantageous both to the well-being of the plant, as well as regards its appearance, to have the centre higher than the sides, this should be taken into account when crocking the pan, so that the depth of compost will be the same in the middle as at the side. In making up the specimen a commencement should be made in the centre, working in the different pieces and sufficient compost at the same time. Give each a fair amount of room, otherwise the growth will soon become crowded, and hence need pulling to pieces again. When completed, give a good soaking to settle the soil about the roots, and then let them go for some considerable time before giving another dose; they may, however, be syringed overhead on warm and bright days. The position best suited to their requirements is the coolest and most shaded part

of the Cattleya house, or one where similar conditions prevail. After a couple of months careful treatment, the new roots will have taken a good hold of the compost, and they may then be treated like those that were not disturbed, excepting through having new material the waterings should not be quite so copious or frequent. The treatment of the remainder will chiefly consist in giving water abundantly and frequently, especially as the growths and the season advances, and when the leaves have reached their full development, and the young bulbs are visible, dilute liquid manure should be given about twice a week. Through watering the plants overhead from the time the flowers are over until the spikes appear again, insect pests do not trouble this much, though now and again a little mealy bug or scale makes its unwelcome appearance, but if the plants are given a good cleaning just now, little more will be needed until this time next year.

The members of the group represented by Lælia anceps will need attention early in the month, having been kept moderately dry since they flowered in February. The type can either be grown in pots, pans, or baskets, but the "alba" section do best when grown in baskets, which, holding less material, become dry sooner, thus occasioning a fresh supply of water. When potting members of this group, all the forward growing parts should be placed towards the centre of the receptacle so that the rhizome will have a greater distance to travel before growing over the boundary. A much greater proportion of peat than moss should be used, the whole being pressed firm so that the roots may find a fitting substitute for their native trees. For some little time after being repotted or top-dressed, water sparingly, but when root action is general a good supply will be needed, especially if the weather be bright, as all these Mexican Lælias only require very thin shading. L. autumnalis, Gouldiana, furfuracea, albida, and Eyermaniana should not be done anything to until new roots appear, keeping them moderately dry until this occurs.

L. majalis must also be kept on the dry side until roots appear from the base of the new growth, and as these will not probably show themselves until about the time of flowering, the growth will have made considerable headway. The secret of success with this grand Lælia lies in keeping it fairly dry all the year, except just when making new roots, and filling up its bulbs, coupled, of course, at this period, with plenty of light.

Lælio-Cattleya × elegans, being of hybrid origin, is rather inconsistent in its flowering season, some producing new growths and flowering immediately afterwards, whilst others make their growths in the autumn and flower in the following spring, hence there can be no particular stated time for repotting or top-dressing, but take each separately and

follow out the advice given as to when to pot an Orchid. This lovely section is very subject to some dreadful disease which attacks the plants and carries them off in a very short time. If signs of this black rot appear in a bulb or leaf, it is advisable to at once cut the bulb away and burn it, for by this timely act the rest of the plant may be saved. To a great extent this disease is propagated in the same way as spotting of the leaves—which latterly, since the cause became known, has not disfigured Orchids so much as it used to—and that is caused by excessive moisture and lowness of temperature combined, a condition that probably causes the black rot in L.-c. × elegans, and other such like plants, the sappy young bulbs being unable to throw off the super-abundance of moisture in a low temperature, and an atmosphere surcharged with aqueous vapour. L.-c. × elegans should be grown suspended at the warmest part of the Cattleya house, using well drained perforated pans for the small examples, and baskets for the larger specimens. For compost use two parts good fibrous peat to one of moss, employing both sparingly, so that the ball of material will not remain wet for any length of time, and under no circumstances should water be given, except when the bulk has become fairly dry.

Cattleya Warscewiczii (gigas), and its variety, Sanderiana, are now pushing forward their new growths, but should still be only given water occasionally, to keep the flowers firm and plump, or no flowers will follow. As soon as the sheaths are visible, new roots will probably appear, and then is the time to give fresh material or repot (if necessary). We have potted members of this section when the buds have been out of the sheath, without injury resulting to the flowers or the plant. When potted just as the roots are starting away, they soon find their way into the new material, and water may be given more frequently and in greater quantity; however, it is the same with this section as with L-c. × elegans—an over generous supply given during dull cold weather endangers the health and existence of the young and succulent bulbs. C. Dowiana aurea, and the forms of C. × Hardyana, as Massaiana, and others of a like nature, should have a warm and light spot given them, and be treated as the above. This section gives the grower a deal of trouble, as they are so difficult to keep through the winter, most of them being so prone to making a second growth after the first one has flowered, and this second adventure coming so late in the year is more often than not a failure, in which case the subsequent growth has to come from the secondary bud or from a back bulb, and in either case the growth is almost certain to be poor in comparison with that produced from the proper bud at the right season.

C. Schilleriana should have a very scanty supply of water until the sheath is apparent. C. Lueddemanniana (speciosissima), which remains in the

Warm house the whole year, is rooting freely, and may have new material, and if any require a new basket, the operation should be performed at once. They should be suspended near the glass, where they may obtain the maximum of heat and light, and given water copiously when growing freely, but a very limited supply when at rest. The same remarks apply to C. superba.

To attempt a detailed account of the treatment required by each member of the genus Dendrobium would entail the repetition and recapitulation of sentences, which would convey to the general reader the idea that a generalising of facts would have served the purpose better; but this is not the case, as there are essential details connected with the successful cultivation of almost each species, which, when set forth in general terms, fail to give an accurate idea of what should be practised therewith; hence not to treat each separately would be an unjustice to them and myself, and to do so would take up more time or space than I have at my disposal, so we must content ourselves by generalising where we can, and just mention a few that stand out from the many. Repotting in connection with this genus, to do it successfully, is quite a work of art, the numerous wire-like roots interlacing themselves and clasping the receptacle to such an extent that to dream of removing the plant bodily would be the height of folly. When growing in pots or pans, these may be broken carefully, and as much ot the decayed material removed as possible, and place the broken pieces of pot into another receptacle, always bearing in mind that Dendrobes do not like much moisture-holding material about their roots. The greater the quantity of material, the greater care will be necessarily needed to keep them from retaining a surplus of moisture at the root. With a small quantity and this principally peat fibre, with ample and effective drainage, water can be given more frequently with less liability to do harm. To prevent the accumulation of material use receptacles as small as possible.

The "nobile" section, which for all practical purposes may include, besides the type, such as Wardianum, crassinode, primulinum, aureum, crystallinum, crepidatum, cretaceum, &c.,; the thyrsiflorum group, such as densiflorum, thyrsiflorum, Farmeri, fimbriatum, Dalhousieanum, &c., all want strong heat, plenty of atmospheric moisture, and abundance of light whilst making their growth, as also do most of the others. D. Maccarthiæ is now showing for bloom;. this species should be grown in shallow pans hanging from the roof, giving ample drainage, with a very small portion of the best fibrous peat obtainable, moss being a superfluity. Whilst growing and rooting freely, too much water can hardly be given it, but when the thin stem-like bulbs are completed, only sufficient to prevent shrivelling will be needed. The old, but only recently introduced D. veratrifolium is a

very distinct and desirable species, that takes more kindly to artificial conditions than do some of the New Guinea species. A plant here, recently in flower, has gone on increasing in size and strength annually, it is in a pot, and receives water only when the material is dry when growing, and when at rest the supply is very limited indeed. D. Dearii always remains in the Warm house, and is supplied with water immediately the compost of peat and moss show signs of becoming dry. If allowed, this species would soon flower itself to death, as it produces its blooms in such profusion, and which are also of such a lasting character, that exhaustion would take place, if allow to perfect all its flowers. Further remarks on this genus must stand over until next time.

The Phalænopses are to many of such an incorrigible nature that few attempt their cultivation, and fewer attain any marked success in that direction, failure in many instances being due to the placing of too much moss about their roots, and this kept constantly saturated, the prevailing idea being that these plants relish a large amount of moisture, and so they do, but not applied directly to the plant, when smothered in moss. The time has now arrived when all the old moss, and as many of the crocks that have no roots attached, should be removed, and replaced with other crocks and fresh living moss. A very thin layer of the latter should be used, and only on the surface of the crocks, none being needed between the bars of the basket. Phalænopses thrive best in suspended baskets, for several reasons. They are out of the reach of cockroaches and woodlice, they come more directly under the influence of the atmospheric conditions, and the roots are not liable to become attached to any foreign substance. To replace a decayed basket, immerse it in a tank of water for a couple of hours, then with the aid of a pair of pliers, pull out the four corner pins of the basket, and then by the help of a knife carefully liberate the roots from the bars, these in most instances coming away freely after the thorough soaking. Instead of putting the roots down through the new basket, take out one of the bottom bars, bring the leaves together and draw them up through to the required level, afterwards replacing the withdrawn bar, then fill in with clean crocks, and surface with moss. For some time after re-mossing the baskets should not be dipped bodily, but only just to the base of the moss, or where there are only a few plants, sprinkle the baskets and moss with a fine rosed waterpot, two or three times a week, to prevent the moss getting too dry. Where a house can be entirely devoted to these plants, top-air should never be employed, and very little at the bottom, so long as the atmosphere keeps pure without opening the ventilators. When the latter have been used in the morning, they should be closed early in the afternoon, the walks, stages, and hot-water pipes should be damped to create a nice moist and genial atmosphere. The shading should remain on

until the sun has lost its power to harm these tender-leaved subjects. As so much depends on the life and health of the leaves—being bulbless and stemless plants—they should be frequently sponged with clear tepid rain-water, to keep them free from dirt and insects, scale and thrips being the worst living enemies, the former attacking the roots and the latter the young and succulent leaves.

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

AT the Royal Horticultural Society's meeting at the Drill Hall, James-street, Westminster, on March 9th, Orchids were exhibited at about average numbers for the season, and included several interesting things, but very little in the way of actual novelty. Two First-class Certificates were given.

The Hon. Walter Rothschild, Tring Park (gr., Mr. Hill), received a First-class Certificate for the remarkable Bulbophyllum Ericssoni, a remarkable Cirrhopetalum-like species, described in 1893 (*vide supra* I., p. 362).

The Right Hon. Earl Brownlow, Ashbridge, Great Berkhamstead, Herts. (gr. Mr. Lowe), received both a First-class Certificate and a Cultural Commendation for a splendid specimen of the old Cymbidium eburneum.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), received a Silver Flora Medal for a group of splendidly-grown Dendrobium × splendidissimum grandiflorum, most of the plants being completely loaded with flowers. He also sent Cattleya × elata (Trianæ ♀ × Lawrenceana ♂), a handsome hybrid with rosy-lilac sepals and petals, and a well-shaped bright purple lip.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), exhibited a very interesting group of fine and rare things, to which a Silver Banksian Medal was awarded. It included cut spikes of Cattleya Trianæ Back-houseana, C. T. Leeana and C. T. Reine des Belges, all very handsome varieties; Masdevallia Schrœderiana, M. triangularis, covered with flowers, the pretty M. × falcata; Dendrobium nobile murhinianum, a most beautiful specimen of D. × micans, and a good D. Kingianum; Cymbidium Lowianum and the distinct C. L. concolor; the rare Miltonia Endresii and Ponthieva maculata, Maxillaria Lawrenceana, Cypripedium × barbato-bellum, Odontoglossum × aspersum violaceum, &c. Special awards were given to the following plants:—A Cultural Commendation to a very fine specimen of Brasso-cattleya × Lindleyana with thirty-four flowers; an Award of Merit each to Masdevallia × Pourbaixii (Veitchiana ♀ × caudata ♂), which is a variety of M. × Kimballiana, and Cypripedium

× hirsuto-Sallieri (C. × Sallieri ♀ × C. hirsutissimum ♂), a very whitish-yellow flower with faint rose tips to the petals; and Botanical Certificates to the charming little Epidendrum Endresii and Sarcochilus Hartmanni.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), received a Cultural Commendation for two enormous spikes of Calanthe × Baron Schröder, a dark and a light coloured form.

W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), sent a light-coloured form of Dendrobium nobile, and a fine specimen of D. primulinum giganteum, the latter receiving a Cultural Commendation.

The Right Hon. J. Chamberlain, M.P., Highbury, Birmingham (gr. Mr. Burberry), showed a small group of Dendrobiums, including D. × Wardiano-japonicum, D. × melanodiscus, D. nobile delicata, D. × Luna, D. × pallens, D. × The Pearl, the three latter beautiful light forms, and a very promising seedling from D. × Ainsworthii ♀ and D. nobile nobilius ♂.

F. A. Bevan, Esq., Trent Park, Barnet (gr. Mr. Lees), showed Odonto-glossum Hallii with a much-branched inflorescence.

W. A. Gent, Esq., Brooklands, Cheshire, sent the beautiful Dendrobium nobile Amesianum.

Mr. J. R. Hall, Foxwarren Gardens, Cobham, sent a spike of Phaius × hybridus (P. grandifolius × Wallichii).

T. B. Haywood, Esq., Woodhatch, Reigate (gr. Mr. Salter), sent a pretty Lælio-cattleya of unrecorded parentage, the flower Indian-yellow inclining to reddish, with purple veining on the lip.

S. J. Lutwyche, Esq., Eden Park, Beckenham (gr. Mr. Paterson), showed two seedling Dendrobiums.

Mr. F. Perry, Spye Park Gardens, Chippenham, sent a good white form of Odontoglossum crispum.

H. Howard Vyse, Esq., Stoke Place, Slough (gr. Mr. Page), sent Lycaste Skinneri.

A. Warburton, Esq., Vine House, Haslingden, sent a fine spotted form of Odontoglossum crispum, tinged with purple on the sepals and petals.

Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, staged a very fine group, to which a Silver Flora Medal was given. It included Cattleya × intertexta (C. Mossiæ ♀ × C. Warneri ♂), a handsome hybrid most approaching the latter; C. × Miranda (C. amethystoglossa ♀ × C. Trianæ ♂) a very pretty form, with lilac-tinted sepals and petals, having purple-feathered markings at the apex, and the front of the lip bright purple; some fine varieties of C. Trianæ; Dendrobium × splendidissimum nobilius (D. × splendidissimum grandiflorum ♀ × D. nobile nobilius ♂), the flowers large and with prettily marbled petals; D. Wardianum, D. × Aspasia, D. × Wiganiæ, D. × crassinodi-Wardianum, the handsome D. atroviolaceum, forms of D. × Ainsworthii, and D. × euosmum; numerous

Cypripediums, Cirrhopetalum picturatum, Anguloa uniflora, a home-raised Odontoglossum × excellens; a fine specimen of Epiphronitis × Veitchii, Epidendrum × O'Brienianum, and a more scarlet variety of the same; E. × Endresio-Wallisii, E. × elegantulum and its light variety langleyense, &c. A Botanical Certificate was given to the pretty little Epidendrum Endresii, and an Award of Merit to Dendrobium × Ainsworthii intertextum, a very pretty variety with cream-white flowers and the usual dark blotch on the tip.

Messrs. F. Sander & Co., St. Albans, received a Silver Banksian Medal for a fine-group, containing Cattleya Trianæ alba and some good coloured varieties; Platyclinis glumacea with over seventy spikes; a fine Miltonia Roezlii alba and M. cuneata with many spikes; Odontoglossum Pescatorei and others; Oncidium insculptum, Cymbidium × eburneo-Lowianum, Dendrobium amethystoglossum and others, Cypripedium × Minnie Ames, &c. Also several good forms of Lycaste Skinneri, including the handsome L. S. aurantiaca, and L. S. pulcherrima, the latter a beautiful white form with rose-pink flush over the segments, to which an Award of Merit was given.

Messrs. Hugh Low & Co., Clapton Nursery, also received a Silver Banksian Medal for a good group, containing many well-flowered examples of Dendrobium crassinode and two of D. c. album, the pretty little Restrepia striata, various forms of Odontoglossum × Andersonianum, and a very fine O. crispum, Cypripedium tonsum, C. × T. W. Bond, and other interesting things.

Messrs. Linden, L'Horticulture Internationale, Brussels, sent Odontoglossum × cirrho-Hallii, recorded as derived from O. cirrhosum ♀ and O. Hallii xanthoglossum ♂, and probably a form of O. × Marriottianum; also O. × W. Stevens, with yellow and brown flowers, said to have been imported with O. triumphans, and two good forms of O. crispum, to both of which Awards of Merit were given. O. c. Kegeljani is white, with six or seven red-brown blotches on the petals and about twice that number of smaller ones on the petals, also one large blotch and several smaller ones on the lip; and O. c. Ami Charles has the ground slightly tinted with rose, the spots somewhat similar but more purple, and the petals and lip finely fringed.

At the meeting held on March 23rd, Orchids were again present in large numbers, and no less than ten medals were awarded, one being to a magnificent specimen of Phaius × Cooksoni exhibited by the raiser.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), staged a magnificent specimen of Phaius × Cooksoni with eighteen strong spikes of flowers, whose brilliant colour contrasted admirably with the noble arching leaves, forming a perfect picture of loveliness. A Silver-gilt Flora Medal was deservedly awarded.

The President, Sir Trevor Lawrence, Bart. (gr. Mr. White), received a Silver Banksian Medal for an interesting group of good things, including several plants of Epidendrum × xantho-radicans, varying in colour from yellow to pale red, Angræcum Ellisii and A. articulatum, which are sometimes confused together, Miltonia × Bleuana with four fine spikes and an aggregate of nineteen flowers, Catasetum barbatum spinosum, the pretty Dendrobium × Wiganiæ, Masdevallia ignea Boddaertii, &c. A Cultural Commendation was given to a fine specimen of Lælia rubescens with eight good spikes, and a Botanical Certificate to Angræcum Mooreanum (Rolfe) a pretty little plant with the habit of A. Sanderianum, and flowers lightly suffused with salmon colour.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), also received a Silver Flora Medal for a choice group consisting chiefly of Odontoglossums, among them the unique plant of O. × Leeanum with a raceme of six branches; O. × Coradinei, and some fine forms of O. × Wilckeanum, O. crispum, and O. × Andersonianum, including rosy and yellow forms; also the handsome orange-coloured Lælia × vitellina.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whiffen), received a Silver Banksian Medal for a group of good things, including a fine Cattleya Trianæ plumosa, with some rich purple feathering on the lip, and some other good Cattleyas; various well-flowered Odontoglossums, some good examples of Dendrobium Jamesianum, &c.

De Barri Crawshay, Esq., Rosefield, Sevenoaks, staged a group of good Odontoglossums, to which a Silver Banksian Medal was given. It included a number of good forms of O. crispum, O. × Coradinei, the handsome O. × Andersonianum Juno, and other good forms.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Barrell), received a Silver Banksian Medal for a good group, including Odontoglossum × Coradinei, some good forms of O. crispum, O. × Andersonianum Ellis' variety; some good Dendrobium nobile, D. Hildebrandii, Miltonia Warscewiczii, &c. A Botanical Certificate was given to Epidendrum varicosum.

John T. Gabriel, Esq., Streatham (gr. Mr. Guyett), also received a Silver Banksian Medal for a group containing some finely-flowered Denbrobium Wardianum, D. Devonianum, Cœlogyne cristata, &c.

Frau Ida Brandt, Brunnenhof, Zurich (gr. Mr. Schlecht), sent cut blooms of several interesting Orchids, including Miltonia Phalænopsis, Warscewiczella discolor, W. aromatica, Oncidium Phalænopsis, Lycaste xytriophora, Phalænopsis Aphrodite Dayana, two forms of P. Stuartiana, &c. A Vote of Thanks was given.

Major-Gen. Hutchinson, Owthorpe, Bournemouth (gr. Mr. Barnes), sent plants of three Chinese forms of Dendrobium nobile with large flowers,

one of them, called Hutchinson's variety, receiving an Award of Merit.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), sent a very interesting plant of Odontoglossum × excellens raised in the collection, from O. Pescatorei and O. triumphans, and the beautiful O. × Ruckerianum ocellatum with a raceme of nineteen flowers, an Award of Merit being given to the latter.

W. Wheatley Bull, Esq., Rockhills, Brincliffe, Sheffield, showed the handsome Dendrobium crassinode Barberianum.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howes), sent a most beautiful nearly white form of Cattleya Trianæ, and the graceful Platyclinis glumacea valida.

Malcolm C. Cooke, Esq., Kingston Hill (gr. Mr. Buckell), exhibited a fine form of Odontoglossum apterum (nebulosum).

F. W. Moore, Esq., Royal Botanic Garden, Glasnevin, sent the pretty Cirrhopetalum picturatum.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), sent a flower of the rare Sobralia Ruckeri.

Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, again contributed a very fine group, to which a Silver Flora Medal was given. It included Epidendrum Endresii, and its hybrids E. × Endresio-Wallisii and E. × elegantulum, Oncidium sarcodes and O. Cavendishianum, Masdevallia × Parlatoreana, the handsome Trichopilia brevis, Lælia × Novelty, Lælio-cattleya × Pallas, some fine Cattleya Trianæ, Cymbidium eburneum and C. × eburneo-Lowianum, Dendrobium × Euryclea, D. × Æneas, D. × Cordelia flavescens, D. × Niobe, D. × Edithiæ, D. × Ainsworthii intertextum, D. × A. sulphureum, &c. A most interesting hybrid was also included, called Epicattleya × matutina (derived from Cattleya Bowringiana ♀ and Epidendrum radicans ♂), most resembling the latter in habit, but with the flower modified in shape and colour.

Messrs. F. Sander & Co., St. Albans, received a Silver Banksian Medal for a fine group, including Cattleya Mendelii fimbriata, with a broad white fringed lip, some good forms of C. Schrœderæ, Phalænopsis Boxallii, Odontoglossum Uroskinneri, some good forms of O. Pescatorei, and other Odontoglossums, Dendrobium Phalænopsis and others, Miltonia vexillaria, Cypripedium × conco-villosum, a fine spike of C. Rothschildianum, and other good things.

Messrs. Linden, L'Horticulture Internationale, Brussels, also received a Silver Banksian Medal for a group of good Odontoglossums, including fine forms of O. × Wilckeanum, O. × Andersonianum, O. crispum, &c. A First-class Certificate was given to O. crispum Luciani, a very fine form, white tinged with rose, and with several large purple brown blotches on each segment.

Messrs. Hugh, Low & Co., Clapton Nursery, showed Cypripedium × Prewettii, partly derived from C. villosum.

Messrs. John Laing & Son, Forest Hill, had some good Cattleyas, Odontoglossums, Ada aurantiaca, Cœlogyne cristata alba, and others, in a collection of miscellaneous plants.

## ORCHID PORTRAITS.

Bulbophyllum Ericssoni, Kränzl.—*Gard. Mag.*, March 23, pp. 180, 181, with fig.

Cattleya × Grossii.—*Gartenflora*, March 1, p. 113, t. 1436.

Cattleya labiata.—*Garden*, Feb. 27, p. 154, t. 1107.

Cattleya Warneri.—*Orch. Alb.*, t. 521.

Cycnoches chlorochilon, Klotzsch.—*Garden*, March 6, pp. 172, 173, t. 1108, and fig.

Cycnoches Warscewiczii, Rchb. f.—*Garden*, March 6, p. 172, with fig.

Cymbidium tigrinum, Parish.—*Orch. Alb.*, t. 523.

Cypripedium × Gratrixianum.—*Orch. Alb.*, t. 524.

Cypripedium × Lathamianum.—*Journ. of Hort.*, March 18, pp. 226, 237, fig. 53.

Dendrobium Dalhousieanum.—*Gard. Chron.*, March 6, pp. 156, 157, fig. 45.

Dendrobium Devonianum.—*Journ. of Hort.*, March 11, p. 197, fig. 41.

Dendrobium × Kenneth.—*Gard. Chron.*, Feb. 27, pp. 134, 135, fig. 37.

Dendrobium longicornu.—*Gard. Mag.*, March 23, p. 180, with fig.

Dendrobium sarmentosum, Rolfe.—*Bot. Mag.*, t. 7526.

Dendrobium transparens album, Rolfe.—*Orch. Alb.*, t. 522.

Holothrix orthoceras, Rchb. f.—*Bot. Mag.*, t. 7523.

Phalænopsis Stuartiana.—*Journ. of Hort.*, Feb. 25, p. 127, fig. 35.

Trichoglottis cochlearis, Rchb. f.—*Journ. of Hort.*, March 25, p. 245, fig. 54.

## CORRESPONDENCE, &c.

H. B. E., Clifton. Dendrobium crassinode, rather small, and perhaps undeveloped. The variety Barberianum has very large bright purple tips to the segments.

W. S. E., Dorking. Epidendrum varicosum, and a form of Lycaste Youngii.

Photographs received with thanks. J. G., New York; W. S.; G. I'A.; R. E.

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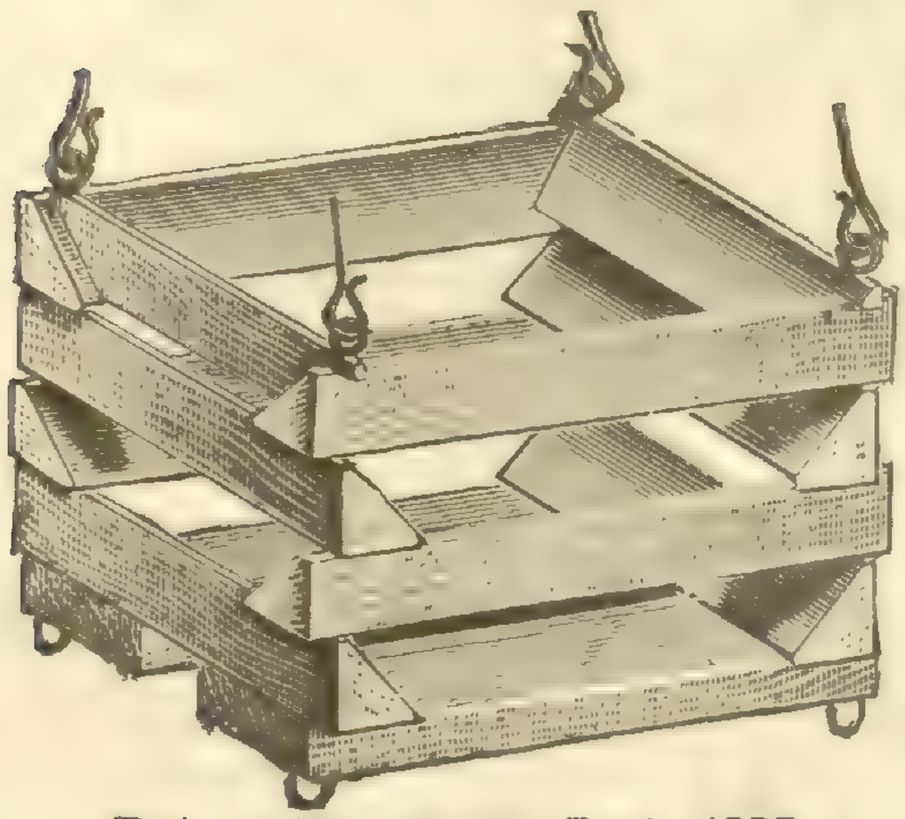

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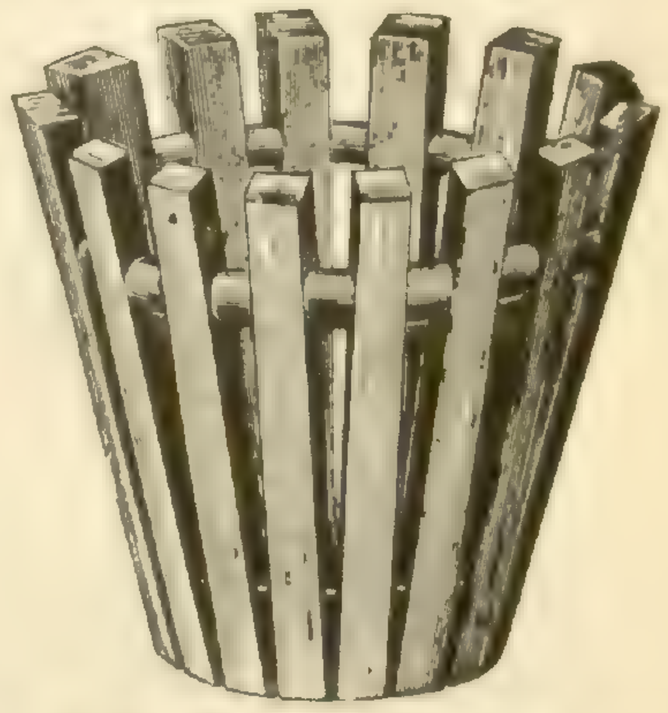

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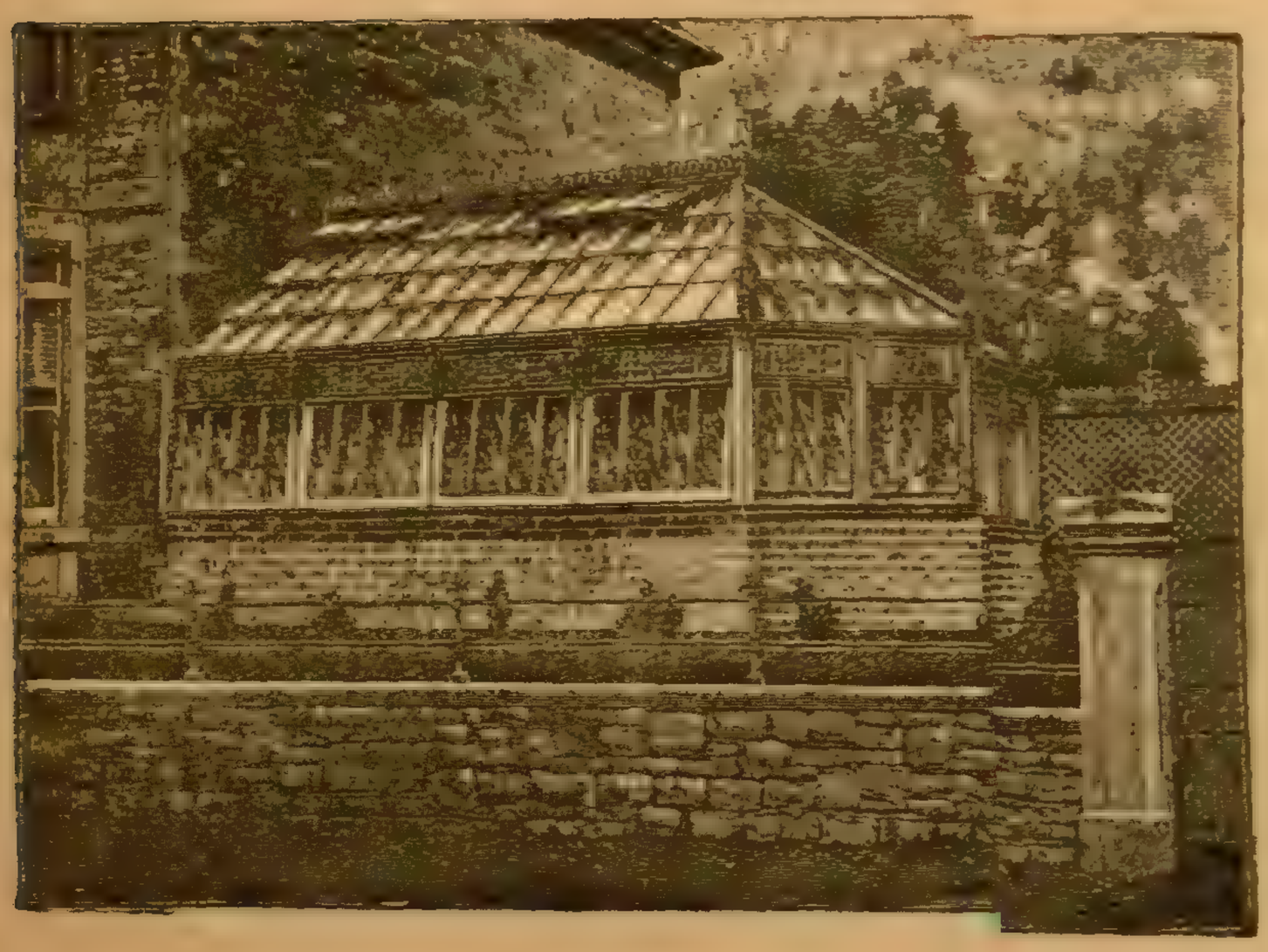

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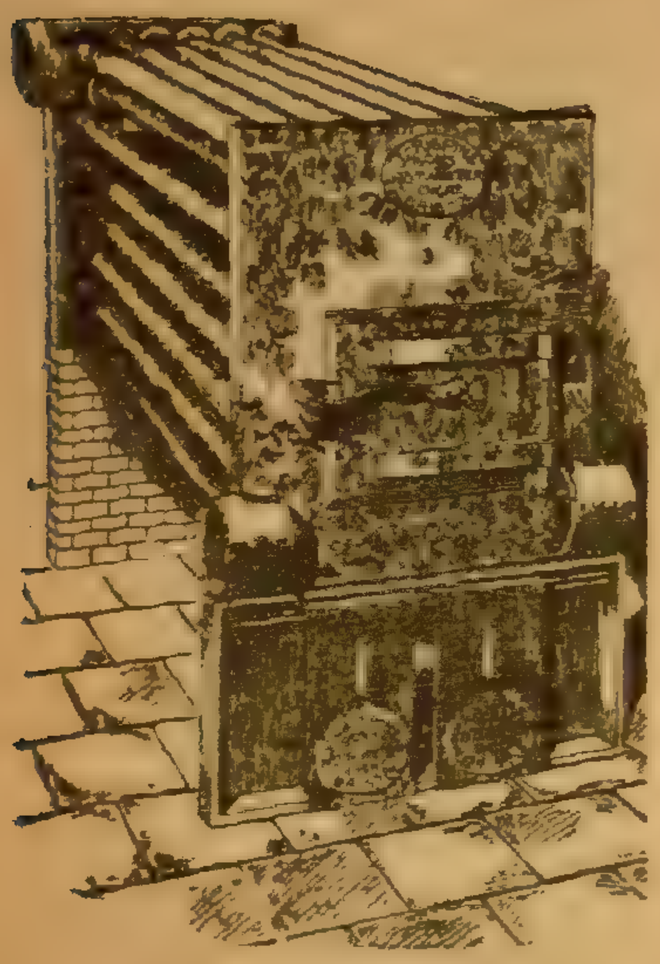

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### Contents.


| | PAGE |
|---|---|
| Bees and Flies carrying pollinia ... | 134 |
| Botanical Orchids at Kew ... ... ... | 133 |
| Calendar of Operations for May ... | 146 |
| Correspondence, &c. ... ... ... | 160 |
| Cypripedium seedlings at Bury ... | 141 |
| Dendrobium hydrids ... ... ... | 146 |
| Dendrobium nobile virginale (Fig 8) ... | 145 |
| Dies Orchidianæ ... ... ... | 135 |
| Epidendrum bituberculatum ... ... | 142 |
| Hybridist— | |
| Lælio-cattleya × Digbyano-Trianæ... | 132 |
| Hamburg, International Horticultural Exhibition at ... ... ... | 152 |
| Manchester and North of England Orchid Society ... ... ... | 154 |
| Notes ... ... ... ... ... | 129 |
| Obituary— | |
| Colonel Trevor Clarke ... ... | 134 |
| Odontoglossum crispum Golden Queen and its relation to O. × Wilckeanum | 143 |
| Odontoglossum luteopurpureum and and O. sceptrum ... ... ... | 141 |
| Odontoglossums from Newchurch ... | 137 |
| Orchid Portraits ... ... ... | 160 |
| Orchid seedlings, the raising of ... | 138 |
| Orchid collecting, Lecture on ... | 144 |
| Orchids at the Royal Horticultural Society ... ... ... ... | 155 |
| Varieties are they constant? ... ... | 136 |
| West's Patent Pot-shaped Orchid Basket (Fig 7) .. ... ... | 137 |


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## NOTES.

THE next meeting of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, on May 11th, when the Orchid Committee will meet at the usual hour, 12 o'clock, noon. The subject of the afternoon lecture on this occasion is "Diseases of Plants, especially of Orchids," by Mr. G. Massee, F.L.S., of Kew.

The great Annual Flower Show will be held, as usual, in the Inner Temple Gardens, Thames Embankment, on Wednesday, Thursday, and Friday, May 26th, 27th, and 28th. On the first day the Orchid Committee will meet at 11 a.m. Silver Cups and Medals will be awarded according to merit, as on previous occasions. Intending exhibitors must give notice to the Secretary not later than Saturday, May 22nd.

The great Whitsuntide Show of the Royal Botanical and Horticultural Society of Manchester will be held at the Old Trafford Gardens, Manchester, from June 4th to 10th. As usual, many classes are devoted to Orchids.

Flowers of the beautiful Dendrobium Devonianum are sent from the collection of R. Le Doux, Esq., West Derby, Liverpool, from a growth bearing as many as eighty-five flowers, forming quite a picture. A flower of Cymbidium Lowianum is also enclosed, in which the blotch on the front of the lip is very dark and richly coloured.

A fine flower of Odontoglossum Pescatorei comes from the collection of W. S. M'Millan, Esq., Maghull, near Liverpool, which measures 3 1-8th inches in diameter across the petals. It is white, with the exception of a

purple stain on the sepals and a purple area with a few spots at the basal angles of the lip. It is from a recently imported plant. A smaller form has a few darker purple streaks on the front of the lip.

Flowers of Odontoglossum × Coradinei Roeblingianum and O. × mulus are sent from the collection of F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey. The former is a very pretty form, in which the shape and markings of O. Lindleyanum are very prominent.

Three flowers of the beautiful Dendrobium × Apollo are sent by Mr. James Cypher, of Cheltenham, showing how great is the improvement being effected in this group. It received a First-class Certificate from the Royal Horticultural Society in 1896, and was described at page 102 of our third volume. Some very fine flowers of D. Wardianum and D. nobile elegans are also sent, one of the former measuring nearly $4\frac{1}{2}$ inches across the petals.

Two flowers of the exceptionally fine Odontoglossum Pescatorei, Slichachan var., to which an Award of Merit was given on April 13th, are sent from the collection of John Wilson Potter, Esq., Slichachan, Park Hill Road, Croydon. The finest is $3\frac{1}{4}$ inches across the petals, which latter are 7-8th inch broad. The sepals are correspondingly broad, flushed with light rosy purple, and the petals and lip nearly white. The disc is deep yellow, with a few red-purple markings at the base.

A very pretty form of Odontoglossum × Andersonianum, with yellow ground, heavily spotted with red-brown, comes from the collection of W. P. Burkinshaw, Esq., of Hessle, near Hill; also a white variety with very numerous small spots. The former comes nearest to the variety O. × deltoglossum. A flower of the handsome Dendrobium atroviolacum is also enclosed, one of fifteen borne by the same plant; also Warscewiczella discolor, from a plant imported with W. Wendlandii and Pescatorea cerina.

Flowers of the handsome Dendrobium × Clio are sent from the collection of F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey. It was derived from D. × splendidissimum grandiflorum ♀ and D. Wardianum ♂, and received a First-class Certificate last year (*supra*, IV., p. 156). It well combines the characters of its two handsome parents.

A raceme of two curious flowers of Cattleya Lawrenceana are sent from the collection of G. O. Sloper, Esq., Westrop House, Highworth, in which the petals are absent. One flower, however, has a small petaloid body at the apex of the column, which may be traced down the column by a purple line down to the point where the petal should be inserted, and thus clearly represents one of the missing organs. It is a curious freak.

A very fine flower of Miltonia Roezlii alba comes from the collection of W. S. McMillan, Esq., of Maghull, near Liverpool. The lip measures over $2\frac{3}{4}$ inches in diameter, and the other organs are proportionately developed. A very pretty form of Odontoglossum crispum is also sent, with pure white ground, and from one to five small cinnamon spots near the centre of the segments, or occasionally a petal is unspotted. The raceme bears nineteen flowers.

A flower of the beautiful Odontoglossum crispum heliotropium, to which a First-class Certificate was given on April 27th, is sent from the collection of R. Brooman White, Esq., of Arddarroch. It measures 3 inches in diameter across the petals, all the segments much undulated, bright lilac-rose, and spotted with red-brown, the spots on the petals being smaller and more numerous. A much spotted form of O. × Andersonianum and the beautiful Cattleya × Lawre-Mossiæ are also sent.

A flower of the very distinct Cypripedium Lowianum concolor has been sent from the collection of Dr. Clark, of Leeds. The lip is entirely yellow, without any trace of the dark blotch of the typical form, with which the sepals and petals agree. A good flower of Odontoglossum tripudians is also enclosed.

A very handsome form of Odontoglossum Kegeljani, usually known under its later name of O. polyxanthum, is sent from the collection of F. Hardy, Esq., of Ashton-on-Mersey. The sepals bear several very dark red-brown blotches, and the petals a zone of irregular spots near the base, while the lip is deep red brown, except at the base, and a narrow yellow margin in front.

A fine white Odontoglossum crispum of good shape is sent from the collection of D. M. Grimsdale, Esq., Kent Lodge, Uxbridge, which has only two minute red spots in front of the yellow disc.

The handsome form of Oncidium superbiens with white ground to the petals, comes from the collection of Alfred Darby, Esq., Little Ness, Shrewsbury. It came home with O. macranthum, and was thought to be that species until it flowered.

A large and very beautiful form of Cattleya Mendelii comes from the collection of J. Leemann, Esq., West Bank House, Heaton Mersey, through Messrs. Hugh Low & Co., who imported it last year. The flower is bluish white, with light rose front lobe to the lip, pure white tube, and light yellow disc.

Flowers of the rare and pretty little Paphinia rugosa are sent from Glasnevin by Mr. F. W. Moore; also a very large and brightly coloured form of Masdevallia Schrœderiana.

A very curious flower of Cypripedium Argus, in which the petals are transformed into lips, is sent by Messrs. Hugh Low & Co. The stamens are absent, or rather united with the petals, which is the cause of the anomaly, and thus it is analogous with the case of C. insigne figured at page 351 of our third volume.

A flower of the beautiful pure white Cattleya intermedia Parthenia comes from the collection of D. B. Rappart, Esq., of Liscard. It is the albino form of this Cattleya.

A hybrid Cypripedium sent from the collection of H. J. Ross, Esq., of Florence, is believed to have been obtained from C. × Io grande and C. Lawrenceanum, and bears evidence of such a descent, both in the leaf and flower, as it seems to have about three-fourths Lawrenceanum in it. The plant is small at present.

A photograph of a fine form of Odontoglossum × Andersonianum with broad segments is sent by Mr. W. Stevens, of Stone, which comes nearest to the variety Ruckerianum of this polymorphic hybrid.

## THE HYBRIDIST.

### LÆLIO-CATTLEYA × DIGBYANO-TRIANÆ.

A SECOND most beautiful hybrid from Lælia Digbyana has now flowered with Messrs. James Veitch and Sons, and received a First-class Certificate from the Royal Horticultural Society on April 13th, under the above name. Cattleya Trianæ was the seed parent. It has now passed into the collection of Sir Frederick Wigan, Clare Lawn, East Sheen, who has kindly forwarded us the flower. It is a great beauty, comparable with the earlier L.-c. × Digbyano-Mossiæ raised in the same establishment, but is darker in colour, and has the buff yellow of the seed parent well developed in the throat. The pedicel is $5\frac{1}{2}$ inches long, the sepals an inch broad and slightly shorter than the petals, which latter are $3\frac{1}{2}$ inches long by $2\frac{1}{2}$ inches broad, and slightly fimbriate at the margin. The lip is as long as the petals, but reflexed in front, and its breadth is $2\frac{1}{2}$ inches, with the margin very undulate and beautifully fringed. The colour of the flower is bright rose pink, with the throat of the lip buff yellow, passing into light yellow inside the rose-

pink margin, and the basal half of the disc radiately veined with reddish purple. In its general shape the flower most resembles the pollen parent, with the petals enlarged and the fringe considerably reduced, but in colour the characters of the seed parent are by far the most prominent. Since the value of Lælia Digbyana for hybridising purposes became known, by the flowering of the beautiful Lælio-cattleya × Digbyana-Mossiæ, many experiments have been made in various collections, and the future may have further suprises in store; but if such crosses have not already been made, we would suggest that some good albino should be used as the seed parent, such as Cattleya Mossiæ Wageneri, or C. Trianæ alba, in the hope of getting a white variety of the above-named handsome hybrids. C. Dowiana aurea should also be tried, if the two species can be got to flower together. Messrs. Veitch are to be congratulated on their success in this interesting field.

## BOTANICAL ORCHIDS AT KEW.

THROUGHOUT the winter and spring there has been a constant succession of interesting botanical Orchids at Kew, including such attractive little plants as Bulbophyllum barbigerum, Restrepia striata, and R. elegans, Dendrobium sarmentosum, Ornithidium coccineum, Maxillaria Houtteana, Sophronitis cernua, and numerous others which deserve a place in every collection. Among recent ones is the remarkable Cirrhopetalum robustum, a plant which has received a First-class Certificate from the Royal Horticultural Society, the pretty little Leptotes bicolor, the rare Angræcum Germinyanum, Masdevallia Estradæ and various allied forms. Bartholina pectinata is a very remarkable terrestrial Orchid from the Cape, bearing a single flower, whose lip is cut up into numerous narrow radiating segments. Holothrix orthoceras is another pretty Cape species with an erect raceme of white flowers. Physosiphon Moorei is much dwarfer than the better-known P. Loddigesii beside it, and has shorter racemes of larger and darker flowers. Maxillaria parva is a tiny little plant with yellow flowers not exceeding the short leaves, and M. aciantha is remarkable for its very rigid sepals and petals.

Among Epidendrums may be mentioned the sweet-scented E. varicosum, the rare E. Linkianum, E. subpurum with panicles of white flowers, E. Parkinsonianum, and the rare E. spondiadum. The allied Amblostoma tridactylum and Scaphyglottis Behrii may also be mentioned. Of the genus Pleurothallis the most remarkable is P. scapha, while P. longissima and P. gelida bear many racemes of light green flowers, forming quite graceful specimens. Octomeria gracilis and several species of Stelis, including green, white, and purple flowers, help to swell the list. Dendrobium teretifolium

is remarkable for its long pendulous terete leaves, and white flowers with very narrow segments, and D. secundum for its dense, one-sided racemes of rosy purple flowers. D. linguiforme is an Australian species with very short, fleshy leaves and racemes of white flowers, and D. Leonis a curious species of the Aporum group. Among Erias may be mentioned E. cristata, E. flava, E. confusa, and E. bicolor. The list also includes Bulbophyllum Watsonianum from Hong Kong, Trias vitrina and T. picta, Brassavola cucullata, Pelixia maculata and P. olivacea, Xylobium leontoglossum, Comparettia falcata, Ponera juncifolia, the pretty little Sarcochilus luniferus, remarkable for its leafless habit, and various other interesting if not exactly showy species.

## OBITUARY.

We regret to hear of the death, on April 11th, of Colonel Trevor Clarke, of Welton Place, Daventry, in his 84th year. The deceased gentleman was a very old, and for many years a most active member of the Royal Horticultural Society, and his services to horticulture generally will long be remembered. Although not an Orchidist specially, in the usual acceptation of the term, he was for a long period a lover and successful cultivator of these plants, and it will be remembered that the remarkable Cirrhopetalum robustum (*supra*, I, p. 175) flowered in his collection in 1893, having been discovered in New Guinea by his nephew, Captain Clarke. Three years ago he was the recipient of a Veitchian Medal for his services to horticulture generally.

## BEES AND FLIES CARRYING POLLINIA.

Various observations on the removal of Orchid pollinia by insects have been made, and Darwin records no less than twenty-three species of Lepidoptera, which have been captured with the pollinia of Orchis pyramidalis attached to their heads, one example which he figures showing no less than seven pairs of pollinia attached one above another to the proboscis, giving it an extraordinary arborescent appearance (*Fert. of Orch.*, ed. 2, pp. 30, 31). Some observations recently made at Kew deserve to be recorded. Mr. Griessen, in charge of the Orchid house, has given me a common humble bee (Bombus terrestris) which he caught there, with three different kinds of pollinia attached to it. On the head, between the eyes, are two pairs, each with their stipes and gland, from some Odontoglossum; on the middle of the thorax are the four pollinia of a Cattleya; and on the back of the thorax, between the wings, are those from a flower of some member of the Vanda

group; showing that the insect was by no means exclusive in its visits. Another example is that of a common blue-bottle fly, with the pollinia of Cirrhopetalum robustum affixed to the middle of the thorax. This case is interesting, as it throws further light on an observation by Mr. F. M. Bailey, who when describing it under the later name of C. graveolens, remarked: "The strong odour of the flowers seems to have the effect of attracting and stupefying flies, so that when by the turning over of the labellum they become jammed between that organ and the column, they are unable to extricate themselves, and die" (*vide supra*, IV., p. 308). In the present instance the flies (for there were two) had no such misfortune. When the flowers opened Mr. Griessen saw an insect visit one of them, and when it flew away he captured it, a carrion fly with green abdomen, allied to the blue-bottle, with the pollinia attached to the thorax. This insect was not kept, but a few days after another fly seen at the flowers and captured, proved to be the blue-bottle above mentioned. The flies are evidently attracted by the fœtid odour, as they are to Stapelia flowers, and it is probable that in its native home in New Guinea, this Orchid is dependent on some species of fly for its fertilisation. In the case of Bulbophyllum macranthum and one or two others the fertilising insects have been recorded by Mr. Ridley, and there is certainly a vast field open for enquiry to those who have the opportunity of observing the fertilisation of Orchids in their native homes.

R. A. ROLFE.

## DIES ORCHIDIANÆ.

I NOTE with regret that the competition for the Special Prizes offered by the Royal Horticultural Society for 1896, to which I more than once called attention, was not a success, as the following extract from the Report of the Orchid Committee, included in the last number of the Society's *Journal*, will show:—"Special Prizes for New Plants, 1896.—With the hope and object of encouraging individual effort and original research the Council in 1896 offered twelve medals—six for Introduced Plants, and six for plants of Home production. Owing to insufficiency of competition (in several of the classes there were absolutely no entries, and in others only one or two at most) the judges appointed to deal with these classes were only able to award the medal in one class, as below:—Class M.—The best Orchid raised in this country not previously shown at any of the Society's meetings. Silver-gilt Banksian Medal, to Messrs. James Veitch & Sons, Chelsea, for Lælio-cattleya × Decia alba."

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With such a small measure of success I infer that the Society are not disposed to repeat the experiment. Yet I think they might very well do so. A competition of this kind should be permanent to be of any value, for

hybrid Orchids are not raised in a year, and those who might have been stimulated to commence operations by the offer of these prizes had they been extended over a series of years could not feel any inducement to begin by a competition for one season only. To some extent this also applies to introduced plants. And it is well-known that no Orchid of particular merit was introduced in 1896, unless Cypripedium Fred Hardy and Cattleya × Le Czar be excepted, which presumably were not entered for the competition. Among hybrid Orchids several handsome novelties appeared, at all events meritorious enough to gain the Society's awards, though they do not figure in the special competition; presumably not entered, also. And this leads me to suggest that in this case, as in that of new plants generally sent for the Society's awards, the formality of entry might be dispensed with. It is obvious that if the awards had been made in accordance with the plants exibited, and certificated through the year, the competition would have been of a totally different character. I commend these observations to the consideration of the Council, for it is unfortunate that their good intentions should have met with such limited success.

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In no part of England are there so many good Orchid collections as around Manchester, and the Orchidists of that district are organising an Orchid Society upon very promising lines. It is intended to hold fortnightly meetings, alternating with those of the Royal Horticultural Society, and to offer prizes at the shows of the Manchester Royal Botanical and Horticultural Society. Distance has probably prevented some of the Manchester Orchidists from exhibiting at the Drill Hall, and a Society of this kind in the North of England will, no doubt, be well supported. The Committee will do well, I think, to avoid the thorny subject of nomenclature, and if the Society devotes its energies to encouraging the extension of Orchid culture generally, and continues to work in harmony with the Royal Horticultural Society, it has my best wishes for its success.

ARGUS.

## ARE VARIETIES CONSTANT?

A NOTE on this question, which was discussed at pages 63 and 95, has been sent by Dr. R. B. Macbean, St. Mary's Gate, Lancaster. Some time ago he flowered a very finely-spotted variety of Odontoglossum crispum, but the next spike produced showed quite an ordinary form, and almost unspotted. It would be interesting to watch a plant of this kind, with a view of discovering, if possible, the cause of such variation—especially how far it is connected with differences in culture and the strength of the plant. The general experience is that most varieties keep fairly constant from year to year, though a certain amount of variation in the spots may be observed, even between different flowers on the same spike.

## WEST'S PATENT POT-SHAPED ORCHID BASKET.

We have received from the Leeds Orchid Co., Roundhay, Leeds, a specimen of West's Patent Pot-shaped Orchid Basket, intended for the culture of Cattleyas and other Orchids which are usually cultivated in pots. It is very light and strong, built of teak rods and held together by two strong bands of copper wire threaded through the rods. The necessary shape is given by threading pieces of bamboo on the upper band, which keep the rods about their own width apart, and as the latter are slightly bevelled inwards, and are pulled tight together at the base, it is quite rigid, and no false bottom is required. The general character of the basket is shown by the illustration, and the success with which Orchids can be grown in receptacles made on such a principle may be seen at page 337 of our last volume, where a plant of Cattleya × Lord Rothschild from the collection of T. Statter, Esq., showing a marvellous root-development, is given. Of that Mr. Johnson wrote that he preferred the cylinder basket for

FIG. 7.—WEST'S POT-SHAPED ORCHID BASKET.

Cattleyas, as the roots seem to find their way outward and travel downwards, as in the photo. It seems only natural that epiphytic Orchids should succeed better in such receptacles than when their roots are confined in pots, and we believe that many growers are now recognising their merits, and adopting them.

## ODONTOGLOSSUMS FROM NEWCHURCH.

We have received a beautiful series of Odontoglossum flowers from the collection of R. Ashworth, Esq., Ashlands, Newchurch, Manchester (gr. Mr. Pidsley). First may be mentioned the rare O. sceptrum Masereelianum, remarkable for its clear yellow colour and total absence of brown markings. It is believed that only one other plant is known. A second is a very large and handsome form of O. × Wilckeanum, one of three produced by

a very small plant. The ground-colour is clear light yellow, with two very large irregular deep chestnut blotches on the sepals, one on the lip, and a few small ones on the petals. There are also a very good heavily-marked form of O. × Andersonianum, and a beautiful clearly-marked form of O. crispum allied to var. Cooksoni. The remainder include good forms of O. triumphans, crispum, cirrhosum, nebulosum, Rossii, and Cervantesii, and afford an indication of the beauty of the collection at the present time, and the care bestowed on its culture.

## THE RAISING OF ORCHID SEEDLINGS.

By R. EICHEL, Bradford.

*(Concluded from page 116.)*

SOPHRONITIS grandiflora has been successfully crossed with Cattleya intermedia, yielding Sophro-cattleya × Batemaniana; with C. Harrisoniana, yielding S.-c. × Calypso; with C. Bowringiana, yielding S.-c. × eximia; and with Lælia pumila, yielding Sophro-lælia × læta. The colour imparted to these hybrids is very marked indeed, and if intercrossed with the labiata section of Cattleya, the result would be glorious and worth all the trouble and disappointments which one is sure to encounter with these seedlings. A few years ago I managed to raise a beautiful lot of seedlings of Cattleya Dowiana aurea × Sophronitis grandiflora, one of the finest crosses imaginable, which I prized very much, but through the folly of one of the men and bad management every seedling was lost. My experience leads me to think that Sophronitis is better adapted as pollen than seed-parent, and in every instance it is advisable to use it as such. Most of the existing hybrids so far recorded have Sophronitis for their pollen parent.

Phalænopses are not good subjects for hybridising. In the first place, the seeds are very small and most difficult to induce to germinate; and, secondly, the seedlings are very subject to damping off when in a young state. Nine years ago Mr. Collier, gardener to the late Mr. G. Firth, who had one of the finest collections of Phalænopsis, obtained seedlings of P. Schilleriana × P. Stuartiana, which were growing on the raft of the parent plant, but the fog during winter time proved too much for them, and they disappeared, much to the chagrin of both the employer and his gardener. The ideal seed-bed for Phalænopses is a rough cut teak raft, well seasoned and without knots, and the young seedlings, after passing through the first year's struggle, grow fast apace. P. × Ariadne (P. Aphrodite × P. Stuartiana) reached the flowering stage in five years. In their native habitat they appear to cross readily, as evinced by P. ×

intermedia, the first recognised hybrid among tropical Orchids, afterwards artificially raised in this country by Messrs. J. Veitch and Sons.

Vandas, Aërides, and Saccolabiums are equally difficult to obtain from seed, though the reward of raising a startling novelty should be tempting. Numerous crosses have been effected with Vanda cœrulea, V. Sanderiana, V. teres, V. Amesiana, V. suavis, and V. tricolor, and the seed sown in all manner of ways, without any success. Vanda × Miss Joachim was raised in Singapore from V. teres and V. Hookeriana, and Mr. H. T. Clinkaberry, who has charge of the rich collection of the Hon. C. G. Roebling, Trenton, New Jersey, has been successful in raising seedlings between V. tricolor and Vanda Sanderiana, a most interesting cross.

Lycastes are good seed-bearers, but seedlings are not so easily obtained as one would think when opening the large pod full of seed. When sown on a mixture of sandy loam and good fibrous peat they appear to germinate freely, but constant attention is required to rear them, and no time should be lost by pricking off the young plants if the seed-beds should show any signs of turning sour. Lycaste costata, with the beautiful fringed lip, is a desideratum for the hybridist, and Maxillaria Sanderiana crosses readily with Lycaste. Singularly enough this genus does not seem to have attracted much attention from the hybridist, though two seedlings have been recorded of Continental origin, namely, L. × schœnbrunnensis, raised at the Imperial Gardens, Schönbrunn, Vienna, between Lycaste Skinneri and L. Schilleriana, and L. × Imshootiana, raised between L. Skinneri and L. cruenta.

Zygopetalums are easily obtainable from seed, and have been used by various growers, more for experimental purposes than anything else, though several desirable hybrids have been obtained. It appears an inexplicable fact that seedlings raised from Zygopetalum Mackayi crossed with Odontoglossum have flowered as Z. Mackayi pure and simple, and I can further place on record a similar instance which occurred with the Rev. F. D. Horner, who had three seedlings of Zygopetalum Mackayi × Oncidium unguiculatum, which to all purposes are nothing else than Zygopetalum Mackayi. Z. × Sedeni (Z. Mackayi × Z. maxillare) is the first hybrid recorded, and is followed by several others, while the pretty Zygocolax × Veitchii (Z. crinitum × Colax jugosus) is of recent date.

A large number of abortive and hazardous crosses have been made, and some quite unlooked-for results may yet be obtained. I may mention here a grower who boasted and showed seedlings of Lælia cinnabarina × Cypripedium caudatum Wallisii. Numerous experiments have been made to cross Cypripediums on Lælias and Cattleyas, and *vice versa*, and in some instances the results have been astounding. A flower of Lælia cinnabarina crossed with the pollen of Cypripedium × Sedeni candidulum, and another

crossed with C. Boxallii, formed pods with apparently good seed, while the reverse crosses formed pods which, when ripe, contained nothing but shrivelled ovules. Evidently the stigma had been irritated by the act of pollination, and the pollen-tubes had commenced to grow downward, causing a considerable swelling; but from some cause or other they were unable to reach the ovules; fertilization, or the development of the embryo, consequently not taking place, hence the shrivelled ovules.

Lælia Digbyana is a most interesting subject for scientific experiments. Quite recently I have seen several beautifully-prepared microscopical slides of seed-pods, where the placentæ had been choked by the pollen-tubes swelling out of proportion, probably through the action of the pollen which had been used.

Various are the ways in which seedlings germinate and thrive in most unlikely places. During my travels I have come across some most eccentric examples. One gentleman used a small house solely for the purpose. The stages were filled with broken bricks the size of a hen's egg, intermixed with charcoal, whereon the seed had been sown. The sight astounded me at first, but on inquiry into the parentage I found most of the seedlings were crosses of Lælia tenebrosa, L. cinnabarina, L. purpurata, and some Dendrobiums, which germinate pretty freely. The house is a small structure sunk into the ground, almost like a pit, and well adapted for the purpose.

In a Continental establishment which I visited last year I saw the most wonderful crop of seedlings, which interested me very much. Blocks of well-seasoned pine-wood, three inches in diameter and four inches in height, stood upright in ordinary saucers of water. The seed was sown on the roughly cut flat surface, germinated freely, and appeared to be very healthy. I received very scanty information, but learned that the seedlings are pricked off into well-prepared Polypodium fibre, to which a little silver sand is added. I heard of this method several years ago, and tried a similar experiment, only in a half-hearted fashion and without success, but I am convinced that the idea is a good one, and well worth trying.

It is difficult to give in an article all the little points of detail which require attention, gained by years of experience, though a personal explanation would make many points clear. I have had invitations from Mr. D. B. Rappart and other gentlemen, who have written me on the subject, and I am pleased that the results have been satisfactory. On January 1st I was entrusted with sowing the seed of a most remarkable cross, Bletia hyacinthina × Cœlogyne cristata alba. The seed germinated fairly well, and the young seedlings are now making a tiny blade of leaf. No doubt they will be interesting, and carefully watched by the owner, who takes a great interest in Orchids.

## CYPRIPEDIUM SEEDLINGS AT BURY.

ENCLOSED are some particulars concerning three lots of Cypripedium which were discovered yesterday (March 31st) for the first time. These seedlings are the first to germinate in 1897, and their early germination promises well for a good crop later on in the year.

C. Argus ♀ × exul ♂. Fertilised February 18th, 1896; sown October 22nd; germinating March 31st, 1897.

C. bellatulum ♀ × exul ♂. Fertilised May 15th, 1896; sown November 24th; germinating March 31st, 1897.

C. × Ashburtoniæ ♀ × Godefroyæ leucochilum ♂. Fertilised June 24th, 1896; sown December 16th; germinating March 31st, 1897.

O. O. WRIGLEY.

Bridge Hall, Bury.

## ODONTOGLOSSUM LUTEOPURPUREUM AND O. SCEPTRUM.

A BEAUTIFUL and most instructive series of flowers of the above two species are sent from the collection of W. Thompson, Esq., Walton Grange, Stone, by Mr. Stevens, showing not only their distinctness, but also the range of variation, especially of the former. Of this twelve different forms are enclosed, ranging from one in which the sepals are almost entirely dark brown, down to the variety pallens, in which the markings are very light brown, and only half cover the light yellow ground. In the petals the extent of the markings relative to the ground colour also varies, in some the yellow, and in others the brown predominates, and as the shape of the markings varies correspondingly, it gives the flowers a very different appearance. The ground colour of the lip varies from bright yellow through primrose to nearly white, and the breadth, amount of markings, and development of the crisped margin also varies greatly. The crest and column wings also differ somewhat, but the former in every case has that spiny appearance from which its later name of O. hystrix was derived. One form in which the lip is more than usually crisped and incurved is apparently the variety crispatum.

O. sceptrum has much shorter and broader sepals and petals, and thus the shape of the flower is entirely different, quite wanting that "starry" appearance so characteristic of the former. The markings at the base of the petals, too, are reduced to numerous small round spots, and the lip is broad at the base and scarcely constricted in the middle, not pandurate with a narrow base as in the former. The crest is also less developed, though similar in general character. Three forms of this are sent, including

the very fine variety concinnum, in which the petals are over three-quarters of an inch across, and the lip nearly as broad.

Enclosed with the preceding are a fine form of O. crispum with very broad rosy sepals and white petals and lip, the latter bearing a few small chestnut spots; two of O. × Wilckeanum, one very large with yellow ground and large dark spots, the other with a whiter ground and more like O. luteopurpureum in shape; and two handsome forms of O. triumphans, one of which has the dark front of the lip broadly margined with white, the margin being a line broad.

Lastly must be mentioned a remarkable inflorescence of O. luteopurpureum showing a peculiarity analogous with the Dendrobium Wardianum described at page 95. The three lower flowers sent are normal in size, measuring over $3\frac{3}{4}$ inches diameter across the petals, but the next and remaining two flowers scarcely reach $2\frac{1}{2}$ inches in the same direction, while in colour they are as ill-developed as they are in size. It would appear that the food-supply was suddenly reduced by about half above the last normally developed flower, though the peduncle shows no apparent cause for this. It is as inexplicable as the case of Dendrobium Wardianum above alluded to, and the flowers present just as great a contrast. We should consider it to be an accidental circumstance, and not likely to be repeated another year.

## EPIDENDRUM BITUBERCULATUM.

It is not known to many that this Orchid is of terrestrial habit, and enjoys an exposed situation by the seaside.

A year ago, while searching for fine specimens of Diacrium bicornutum (the old Epidendrum bicornutum), which grows down on rocks and trees by the seaside in Trinidad, the writer found fine, healthy patches of Epidendrum bituberculatum growing in the leaf-mould of the islands of the Bocas. These plants were far healthier than any seen before, and sturdier than any grown on blocks or baskets or even found on trees, on these islands. The writer, taking this lesson from nature, has been very successful in cultivating this Orchid as a semi-terrestrial plant, in well-drained pots, with sand and fine leaf-mould.

In its native home this Orchid can stand great heat and light, the temperature of the rocky promontory on which the plants were found being about 78° F. mean, and ranging from 72° to 89° F.

They were found in bloom in February, growing among the long grass, the locality being then sparingly covered with thin and almost leafless brushwood.

T. I. Potter.

Trinidad, B.W.I.

## ODONTOGLOSSUM CRISPUM GOLDEN QUEEN AND ITS RELATION TO O. × WILCKEANUM.

In reference to the note on the above plant (page 111), I am glad to see that you at first thought it a form of Wilckeanum, though because you could not find the crest, column wings, and lip to be like luteopurpureum, you gave the idea up. I have my dried bloom and your figure before me, the latter, by bad arrangement of the light, has blackened out the elongated filaments of the crest, hence it misleads a casual observer.

The dried bloom distinctly shows two filaments on each side of the crest, elongated beyond the edges of the plate, which in an ordinary crispum is almost entire at the edge, but as soon as any influence of luteopurpureum appears the nerves elongate and the extended filaments of that species supervene; also the panduriform shape of the lip clearly shows the luteopurpureum form, though in a modified degree.

The yellow colour, brown spots arranged in three whorls in the sepals and one in the petals, and the extended filaments in the crest, are three strong points as evidencing the influence of luteopurpureum, at least to my mind. Form, constituting the fourth point, is more like crispum; but in the finest forms of Wilckeanum form goes to crispum almost always (*vide* Baron Schröder's "Queen Empress" at R.H.S., April 13th, 1897). Again, even the two teeth of the lip of the "Golden Queen" are far more ragged than an ordinary crispum, and also longer.

I admit these *botanically* important features are less marked than the *horticulturally* important ones in colour, spots, and good shape; hence it *seems* nearer crispum, but nothing will ever convince me that "Golden Queen" is a pure crispum, speaking *scientifically*.

It is quite possible that it may be a hybrid between Wilckeanum and crispum, but I am of opinion that were this so, the spots would, perhaps, have been more reduced, but I prefer to think it a Wilckeanum pure and simple, having so expressed myself in the last paragraph, and I can but see it in this light.

DE BARRI CRAWSHAY.

A fine photograph of a single flower was sent by Mr. W. Stevens, Mr. Thompson's gardener, in which the details of the crest have come out a little clearer, but it arrived after the block had been prepared. The photograph used was taken by Mr. G. I'Anson, of Upper Clapton. The lateral teeth of the crest, it is true, are slightly more prominent than in O. crispum, and it is quite possible that it is a form of the variable O. × Wilckeanum, in which the shape of O. crispum is nearly reproduced. Other instances could be adduced among hybrids.—ED.]

## LECTURE ON ORCHID COLLECTING.

A LECTURE, entitled "Orchids: their Habitat, Manner of Collecting, and Cultivation," was given by Mr. Henry A. Siebrecht, at the meeting of the Torrey Botanical Club, New York, on February 9th, 1897, handsomely illustrated with lantern slides by Mr. Cornelius Van Brunt, coloured by Mrs. Van Brunt, and is reported as follows in the *Bulletin* of the Club, p. 159.

Mr. Siebrecht, in his paper, referred to the hardships undergone by the Orchid-collector, and paid a tribute to the energy displayed by three friends of the speaker—Carmiole, an Italian, who had come to New York when the speaker was a boy; Förstermann, who died about two years ago, the victim, like most collectors, of disease contracted in that enterprise; and Thieme, who had made three trips for Mr. Siebrecht, and who went last to Brazil in search of the Cattleya labiata, but was never heard from.

Mr. Siebrecht referred to three trips of his own in quest of Orchids, to the West Indies, Venezuela, Brazil, and Central America. He then exhibited the lantern views, which were of remarkable beauty, and evoked frequent applause. They included numerous representatives of the chief genera cultivated; also with views of interiors, showing a house of Cattleyas in blossom, etc. Slides showing numerous species native to the Eastern United States followed.

Mr. Siebrecht then described the culture of Orchids, and classed their diseases as chiefly because too wet, when the "spot" closes the stomata, or too dry, when they collect insects. He referred to their insect enemies at home—the "Jack Spaniard," which eats the marrow from the bulb, and the Cattleya fly, now introduced into English houses. He mentioned the ravages of Cladosporium, and the great difficulty with which Orchids of the genus Phalænopsis are preserved from fungal diseases.

The subject was further discussed by the President (the Hon. Addison Brown), Dr. Britton, Mr. Samuel Henshaw, and Mr. Livingston, the latter referring to his recent experience as an Orchid collector. A slide was exhibited, made from a photograph taken by Mr. Livingston, showing his Orchids packed upon oxen, and so carried down from the mountains to Magdalena.

Mr. Henshaw spoke of his visit to Mr. Siebrecht's nursery in Trinidad, and of the growth made there by Crotons, as much in one year as here in four or five. In those gardens they divide their plants by rows and hedges of Crotons, which are sheared off as we would trim a privet hedge. Mr. Henshaw also paid a deserved tribute to Mrs. Van Brunt for the wonderful success of her colouring of the Orchid slides.

## DENDROBIUM NOBILE VIRGINALE.

A TRUE albino of Dendrobium nobile will come as a welcome surpise to Orchidists. Previously known white varieties, as albiflorum and Amesiæ, have the dark maroon disc developed to its full extent, while Ballianum, in which the disc is only present as a faint cloud, is not white. In the present variety, however, the flower is absolutely without a purple spot or stain of any kind, the only trace of colour being that shade of palest primrose in the lip which seems almost inseparable from the flowers of Dendrobium nobile. Such a plant, with the constitution of this well-known old species,

Fig. 8.—DENDROBIUM NOBILE VIRGINALE.

is indeed an acquisition, and a great future may safely be predicted for it. It appeared in the collection of Mr. Thomas Rochford, Broxbourne, among some plants out of a recent importation of Messrs. F. Sander and Co., St. Albans; a very small piece purchased with others for a very trifling sum. Messrs. Sander have now re-purchased the plant, which is said to be a very small one, with only three pseudobulbs, and one eye at the base of the new growth. The remainder of the short rhizome was quite dead, probably owing to its being deeply imbedded in a large mass of the typical D. nobile when first found by Mr. Rochford's Orchid grower. The general character of this charming variety is shown

by the accompanying illustration (fig. 8), which is reproduced natural size from a photograph from Messrs. Sander. The living flower measures $3\frac{3}{4}$ inches in diameter across the petals, which themselves are seven-eights of an inch broad. Messrs. Sander must be congratulated on the possession of such a beautiful novelty.

R. A. R.

## DENDROBIUM HYBRIDS.

We are now able to record the third hybrid between the D. thyrsiflorum and D. nobile groups, in the collection of R. Brooman White, Esq., of Arddarroch. It is believed to have been raised from D. Farmeri × D. nobile, and should be strong enough to flower next year, in which case we hope to have the pleasure of seeing it. In our note at p. 110, the parentage of the second hybrid of this group was given as D. densiflorum × D. nobile. It should have been D. densiflorum × D. tortile. Our readers should make the necesssary correction.

## CALENDAR OF OPERATIONS FOR MAY.

By W. H. Young, Clare Lawn, East Sheen.

The summer treatment of Orchids may be said to commence with this month, though each particular item in the daily management of these subjects should, at the beginning of the summer season, be carried out in a moderate and circumspect manner, for as all gardening operations depend so much on the state of the weather, so also will the adoption or rejection of the "fine weather" treatment of Orchids have to be considered with the advent of each day. The maximum temperatures will now be reached—that is, with the aid of fire-heat—namely :—

| | Day. | Night. |
|---|---|---|
| East Indian and Phalænopsis house ... | 70° | 65° |
| Cattleya and Mexican house ... ... ... | 65° | 60° |
| Intermediate house ... ... ... ... | 60° | 58° |
| Cool houses ... ... ... ... ... | 55° | 50° |

The day temperatures of the first four may rise to anything under 85°, providing the rise is caused by sunshine alone, the above figures only indicating the degree of warmth required to be maintained by artificial means if that from natural sources be lacking.

The question is often asked by persons unacquainted with the habits of Orchids as to when is the best time to see them—meaning, when is the best floral display produced by these varied and gloriously-coloured flowering plants? Time was when it was safe to give the month of May as the "best

time," but now, since the re-introduction of the autumn flowering Cattleya labiata, Dendrobium Phalænopsis, and the accumulation of hybrid Cattleyas, Lælias, Dendrobiums, and Cypripediums, as well as other less showy species, it is not so easy to define the period when the best display of Orchids may be seen. However, May undoubtedly is *one* of the best months, for then it is that such magnificent Orchids as Cattleya Mossiæ, Mendelii, Warscewiczii (gigas), Warneri, intermedia, Schilleriana, Skinneri, superba, and Lueddemanniana (speciossisima), Lælia purpurata, grandis, and tenebrosa, Sobralias, Odontoglossum crispum, Pescatorei, &c., Miltonia vexillaria, Masdevallia Harryana, Lindenii, Veitchii, and ignea, Cœlogyne Dayana, and tomentosa, Vanda teres, and hosts of other pretty if less gorgeously-coloured Orchids, turn our houses into a veritable blaze of colour, to say nothing of the (to true Orchidists) wonderful charm to be found in the diversified forms of the various floral appendages of the different species.

The potting and top-dressing of Cattleyas should be proceeded with as each individual member advances into a suitable condition to be operated upon, carrying out the principles advocated in last month's Calendar. Amongst the many species to be operated on this month is Cymbidium Lowianum, than which there is no Orchid that gives such good results, irrespective of locality, in this respect differing from the Odontoglossums, which are affected, adversely or otherwise, by the geographical and geological nature of the locality in which they are. The period of flowering of this species extends from the middle of March until the end of April, or later, according to whether or not the wise course be adopted of cutting off the spikes after the flowers have been in an expanded condition for about four or five weeks. I have known them to remain on the plants in bloom for three months, but the folly of this was shown by the exhausted and shrivelled condition of the bulbs, and in the weakness of the succeeding growths. Plants in a vigorous condition will need repotting about every third year, top-dressing to these being of little use, and difficult to carry out if decided upon. The system adopted here, with more than ordinary success, is to repot a few plants every season, and this is done about the end of May or early in June. The compost used consists of two parts each of good fibrous loam and peat, obtained in as lumpy a nature as possible, one part of well-decayed farm-yard manure, partially dried before using, and sufficient coarse silver sand to render the whole porous. The plants should be allowed to become dry beforehand, and then turn each out without disturbing the crocks, which are held together by a mass of roots; select a suitable-sized pot, place a large piece of crock over the hole (first seeing that the latter is sufficiently large to allow water to drain away quickly), arrange the ball of the plant in the new pot so that, when completed, the surface will be about one-and-a-half inches below the edge, fill in around the ball with drainage

to about one-half of its depth, over which place some rough material, and then complete with the mixture, which should be rammed in fairly firm. For a week or so no water should be given those repotted, and when it is applied it should be through a rose for several times, until the surface has settled. After sufficient time has elapsed to allow the new roots to enter the fresh soil, water should be given more frequently, but being grown continuously in a cool, moist atmosphere, it is wonderful how long they will go without requiring a fresh supply at the root. The temperature given to this species here, is similar to that generally afforded Odontoglossum crispum, though perhaps the house where the Cymbidiums grow becomes a trifle warmer during the afternoon, as the blinds are drawn up earlier than on the Odontoglossum house, but as far as fire-heat is concerned less is needed for these during the winter, as they will stand a much lower temperature than the generality of cool Orchids. Two years ago during the severe winter we then had, the temperature of this house was exceedingly low, viz., 38° and 40° for over six weeks, and for forty-eight hours all our efforts could not raise it above 34°, yet no harm resulted, strong and many-flowered spikes being produced about this time, some carrying over thirty blooms. In the autumn when the bulbs are filling up, alternate waterings with dilute liquid manure should be given, more especially those that were not given a shift. C. giganteum thrives very well along with these, but is a very shy one to bloom : it may also be given a shift now if in need of one. It is not such a vigorous growing kind as C. Lowianum, and therefore less pot room is needed ; it is as well perhaps to remove this species to a drier and warmer house when about to flower, as this usually takes place during winter when light and heat are at a premium. The same remark applies to C. grandiflorum and Tracyanum. C. eburneum, Mastersii, and elegans may also be attended to now : with the first mentioned two top-dressing is preferable to re-potting when the drainage is known to be in good condition, picking out the old compost down to the crocks and replacing with a mixture of two parts peat, one fibrous loam, and the other chopped moss and silver sand or finely broken crocks. C. elegans may have a similar soil to that given to C. Lowianum. They should be grown a trifle warmer, say along with the Masdevallias, and watered freely during the season, but sparingly during the winter months.

Whilst writing of cool Orchids it may be as well to dwell for a short time on a very much neglected class of plants, namely, the Barkerias. These, when given the right position and treatment, well repay what little attention they need. They are best grown in suspended pans, to the wires of which the stem-like pseudo bulbs may be tied, thus doing away with the necessity of using stakes or twigs. Just now they are beginning to break from the central portion of the last made growth, and should some time this month

be done up for the season. If kept in good health for a sufficient number of years, they are apt to become too tall to be neat, on account of their peculiar mode of growth, hence they should be shortened every few years, by cutting a portion of the lower part of the stem away, then fix the bases of several in a pan, tie the stems or roots to the wires, fill in with crocks almost to the rim, and surface with moss. The plants should be hung in the full sun, and never shaded, and be given large quantities of water, both by dipping and syringing when growing, but from about the middle of November until they start to grow again, not a drop will be needed. We have a little place that just suits their requirements, where they can be syringed frequently during hot days, without fear of injuring other plants, and also where the air can be taken off about three o'clock, and a very high temperature obtained by sun heat, again however giving air in the evening to carry off evaporation.

Of the intermediate Orchids that will need attention this month, Odontoglossum grande will be one of the principal. Up till now they have been kept on the dry side, since their bulbs matured, but now growth has commenced, root action will soon follow, and any potting or top-dressing needed should be done just as the roots appear at the base, using well drained pots, and a mixture of two parts peat to one of sphagnum moss. Except when growth and root action is vigorous, water should be given very sparingly, taking care in its application not to let any lodge in the young growths from which the flower-spikes proceed, or they will probably damp off. Another is O. citrosmum, one of the most pleasing and delightfully scented Orchids extant. These should be grown in teak-wood baskets, or shallow pans, so that they may be suspended when about to flower, or they may be grown so continuously. They are kept dry all the winter and until the spikes appear in the new growth, when immediately these are discernible a good soaking is given, afterwards keeping the ball moist with an occasional dip. As soon as the spikes are off top-dressing or re-basketing should ensue, using peat and moss in equal proportions. The material should never be kept long in a saturated condition, always allowing it to get moderately dry before giving a fresh supply of water. They appreciate a fair amount of sunshine and air. When in bloom, the atmosphere, where practicable, should be kept much drier, so that the flowers last longer in good condition without spotting.

Coming to the East Indian house we have the grand Dendrobium Phalænopsis in the act of producing new growth, which, when sufficiently advanced, will emit new roots, and for the benefit of these it is better to anticipate their appearance, than wait until they show before giving new material. These require very small pans or baskets to grow in, the former for preference, as they can be easily broken, if a larger one is required at

any time, whereas when in baskets, it is impossible to disengage the roots from the bars without irretrievable damage being done, and hence the old basket would have to be put bodily into a new receptacle. Until root action commences very little water should be afforded them, and even after fresh peat and moss have been put to them, it should become partially dry before giving a fresh supply of water. A warm and bright position should be selected for these, where during bright sunny days the syringe may be used amongst them. Having such long bulbs, and small receptacles, they are too top-heavy to stand on a stage, hence they should be suspended, and if possible this should be done in such a manner that they occupy a relative position to what they would if standing on the stage. Do not, however, drop them down too far from the glass. I have heard and read about some peculiar beetle that was imported along with this variety, and if the insect is as destructive as stated, we are to be congratulated on being left out of the visiting list of this pernicious pest. D. Phalænpsis Statterianum and D. bigibbum thrive under the same conditions and treatment as the above. D. Bensonæ is a lovely species, which, however, under ordinary circumstances does not keep for many years in good condition; it makes good progress for a season or two, and then dwindles away. Just now it is in the double act of flower and growth production, the former on the last made bulbs, and although this is the case, water in very moderate quantities should still be afforded, the only time in its existence when a good supply is requisite, is when growth is vigorous, and root action abundant. All through the resting period the plants should remain in the Warm house, and be given only sufficient water to keep the bulbs plump. Fresh peat and moss may be given as soon as new roots appear. Almost identical treatment is needed in connection with the grand D. formosum giganteum, and the pretty D. Parishii. The former belongs to an entirely different section (nigro-hirsutæ) of the Dendrobe family, yet, if given the same treatment as the other two, it succeeds fairly well. D. Lowii is another belonging to this section, and is now in or about to flower. We have plants of this doing very well in small pans suspended near the glass, and, strange to say, have always been kept fairly well supplied with water, by reason of their being seldom in a state of rest; or is it that their continual activity is caused by being kept moist? Anyway, they seem to appreciate the treatment afforded, for, contrary to the usual rule, each succeeding growth has been stronger than the previous one.

Cœlogyne Dayana and tomentosa are now flowering, the first from the young growths, and the latter from the base of the last made bulbs. Although their mode of flower-production is so different, yet in other respects they are very similar, excepting in the colouring of the flowers. As soon as these are over and root action is discernible, they may have some

of the old soil picked out, and re-placed with a mixture of two parts fibrous peat to one of fibrous loam, some chopped moss, and finely-broken crocks, the whole well mixed together. If any require new baskets or pans, they should be allowed to get dry for a few days, so that the task may be more easily performed, with less risk to the roots, which will be much tougher when dry. In re-potting large specimens, pieces of crock should be placed here and there in the compost to obviate using so large a quantity of the latter. Careful watering should follow re-potting, but after the roots have taken hold of the new stuff large and frequent doses should be the rule, until the growths are complete, when smaller quantities, and less frequently applied, should be given. Red spider is very fond of the leaves of these two plants, and to keep these under frequent sponging is necessary.

Cycnoches chlorochilon, "The Swan Orchid," requires to be grown in the hottest and lightest part of the stove, removed from any plants that are syringed, likewise Catasetums, for if water lodge in the unfolded leaves they are certain to damp off and ruin the growth. In the highly-saturated atmosphere of the stove these plants require very little water, though in settled, dry, hot weather a rather more liberal supply may be afforded. The different species of Mormodes require exactly the same treatment, but may be hung up at the warmest part of the Cattleya house, as a drier atmosphere is better suited to these.

The concolor section of the genus Cypripedium is the most difficult to keep in good condition for long after being imported, and under ordinary circumstances one has to renew or replenish the stock whenever a chance of acquiring newly-imported plants occurs. Fortunately they are cheap; but for all that it would be more creditable to us as growers if we could evolve and carry through a course of treatment that would be a permanent success. C. concolor, Godefroyæ, leucochilum, and niveum are all interesting, as well as pretty little plants, and given good attention, may be induced to thrive for a few years. I do not think it is so much a matter of compost with these, as some would have us believe, a suitable position and careful watering being the principal factors conducing to success. A hot, moist corner, where condensation does not take place through the temperature falling rapidly, is an ideal one to my way of thinking. In an atmosphere of this kind little water need be given to the plants direct, providing that the surroundings be kept well moistened. Almost innumerable composts have been advocated, but to my mind one cannot do better than to fall back upon our old friends, peat and moss, with ample drainage in the pots or pans used for the plants. C. bellatulum has a more robust constitution, though few manage it successfully for long. A fair amount of success may be obtained by placing newly-imported plants in well-drained pots or pans, and using for compost a mixture of one part fibrous

loam, one of peat, and another of chopped moss, and mixing in a few nodules of lime-stone or "tufa" during the process of potting. A warm and light position in the Intermediate house is the one most suited to its requirements. The members of this section should not be watered in the ordinary way, but immersed to the rim of the receptacle in a pail of water, thus lessening the chance of wetting the growths. Black thrips soon do harm to the leaves and flower-buds if left undisturbed, and to keep them clean and free from insects fumigation should take place monthly, and the leaves be carefully rubbed over afterwards with a moist sponge.

[These plants do not grow in peat and moss in a wild state, but in loam, on limestone rocks, and those who have adopted a method of treatment in accordance with this fact have found a great improvement in the health of their plants. See a note at page 45 of our last volume.—ED.]

## THE INTERNATIONAL HORTICULTURAL EXHIBITION AT HAMBURG.

FAVOURED by fine weather and a brilliant assembly of horticulturists from all parts of the world, the opening of the International Horticultural Exhibition proved a great success.

The Horticultural Society of Hamburg, Altona, and district may be congratulated for the admirable manner in which they have carried out this great undertaking. The committee of management has been strengthened by a powerful combination of the leading citizens; indeed, no effort has been spared to make the exhibition one of the chief attractions of the German Empire during the next six months.

The happy selection of the beautiful park between the Holstenthor and Millernthor augurs well for the promoters. Easily accessible from all parts of Hamburg, it will no doubt form a favourite pleasure resort. During the past six months architects, landscape gardeners, and several hundred of labourers have been busy laying out the grounds and erecting suitable buildings, and the transformation is an agreeable surprise.

Everything appertaining to horticulture is represented, and it would fill the pages of the *O.R.* to give an adequate description to guide those seeking information; an official programme, admirably compiled, is on sale everywhere in the grounds.

The prize list for Orchids, though a very tempting one, brought out a moderate competition only. Baron Sir H. von Schröder, The Dell, Egham (gr. Mr. Ballantine), staged an exceedingly rich and valuable group of Orchids, which formed one of the chief attractions to the many visitors of the show. One remarkable feature was a fine series of choice forms of

Odontoglossums, for which the collection is justly celebrated. The heavily blotched O. crispum Rex contrasted well with the chaste O. c. xanthotes, while several long, arching sprays of O. × excellens, × Wilkeanum, × Andersonianum and Hallii, stood prominently out of the greenery, which had been judiciously used in the arrangement. Noticeable amongst some choice Cattleyas was Lælio-cattleya × Marriottiana, Lælia × Latona, and Lælia × vitellina, the last named being the same plant exhibited at the meeting of the R.H.S. six weeks ago. The group contained some very good Cypripediums, as × Gertrude Hollington, belatulum album with three flowers, a dozen Mastersianum, Selenipedium × Clonius, &c.; a finely flowered Anguloa uniflora var. Turneri formed one of the centrepieces, while the background consisted of good specimens of Vanda Gottschalki, Vanda teres giganteum, Cymbidium Lowianum, and C. × eburneo-Lowianum, several Dendrobium Phalænopsis, and a well-flowered plant of D. lituiflorum; two strong plants of the rare Lueddemania Lehmanni and several Cœlogyne Dayana were hanging from the roof. An extra prize was awarded to this group.

Mdme. D. W. Hell, Hamburg (gr. Mr. Donat) received first prize for a group of twenty-five Orchids, consisting chiefly of showy Cattleyas, Odontoglossums, and a plant of Warscewiczella discolor.

Messrs. F. Sander & Co. were awarded an extra prize for a group of Cattleya Schrœderæ, while under a huge glass case they exhibited a seedling Cypripedium named "Oakes Ames" (Rothschildianum × ciliolare), for which they received a special award. The flowers are unusually large, showing little trace of Rothschildism, the sepals are drooping in a semi-circle, like Morganiæ, heavily spotted, the dorsal sepal is large, almost like Curtisii, veined with green and dark port wine colour; a very handsome bold hybrid.

In class 96, a group of Orchids of not less than 100 plants, the honours were divided between Mr. C. Stoldt and Dr. Nanne, each of them receiving 1,000 marks (£50).

Mr. Stoldt had some finely-grown and well-flowered plants, lacking, however, in variety. His Lycaste Skinneri are models of culture, and embraced several distinct and beautiful forms. Long sprays of Odonto-glossum polyxanthum, O. hystrix, O. Pescatorei, and O. × Ruckerianum were very telling, intermixed with a few good Cattleya Mendelii, C. Schrœderæ, and C. intermedia they made a brave show, and were pronounced the best Continental grown Orchids.

Dr. Nanne's group contained many fine examples of Cattleya Mossiæ, Lælia purpurata, Odontoglossums, Dendrobium thyrsiflorum, Anguloa Clowesii, and Dendrobium infundibulum, tastefully arranged with palms and ferns.

W. Runde, Wandsbeck, Hamburg, staged the best five Orchids, a well-flowered plant of a very fine form of Cypripedium villosum deserving special notice.

Frau Etatsräthin Donner (gr. Th. Reimer) exhibited a few Orchids not for competition, Phaius grandifolius, Sobralia macrantha, Cattleya Mendelii, and several well-flowered Lycaste aromatica.

Legationsrath Rucker Jenisch (gr. J. Heydon) staged a good many Orchids, chiefly Vanda suavis, tricolor, and Dendrobium thyrsiflorum, in a group of miscellaneous plants.

Orchids were in evidence in bouquets and floral decorations, and used in every instance with great advantage and good taste.

Periodical shows of different plants are held every fourteen days, but the next show of Orchids will take place from August 27th to September 5th, when, in addition to the prizes in schedule, extra ones to the value of 4,600 marks are offered. Truly a tempting inducement for a good and numerous competition.

R. Eichel.

## MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

An adjourned meeting was held in the Memorial Hall, Albert Square, Manchester, on April 23rd, G. Shorland Ball, Esq., of Ashford, in the chair, when the following proposals were agreed to:—That the Society be called the Manchester and North of England Orchid Society, with an entrance fee of one guinea, and an annual subscription of one guinea; that the Right Hon. J. Chamberlain, M.P., be invited to become the first president; that E. Ashworth, Esq., Harefield Hall, Wilmslow, be appointed Chairman of the Society and of the Orchid Committee; W. Thompson, Esq., Walton Grange, Stone, Vice-Chairman; G. Shorland Ball, Esq., Ashford, Wilmslow, Hon. Treasurer; and W. A. Gent, Esq., 41 Faulkner Street, Manchester, Hon. Secretary. The following gentlemen were elected members of the Orchid Committee:—Messrs. J. Anderson, W. Bolton, H. Greenwood, D. B. Rappart, Capt. G. W. Law-Schofield, T. Statter, E. J. Sidebotham, W. Stevens, A. Warburton, and P. Weathers.

The Hon. Secretary announced that twenty-nine gentlemen had already intimated their intention to become members, and it is expected that many others will join when the Society becomes properly organised. The object of the promoters is to provide a fund from which, after payment of the necessary expenses, medals and prizes may be awarded from time to time. It is also proposed that prizes shall be given at the Manchester Royal Botanic Show to exhibits of sterling merit, rather individual than collective,

the aim being to get the choicest Orchids from any source, rather than indiscriminate lots for mere show. It is intended that the meetings shall not clash with those of the Royal Horticultural Society, and it is proposed to hold them on alternate Tuesdays. Particulars may be obtained from the Hon. Secretary or Treasurer.

Several choice Orchids were exhibited ; Odontoglossum Thompsonianum, O. × Wilkeanum with two splendid spikes, thirty inches long, O. Hallii xanthoglossum, O. luteopurpureum, and Cattleya Lawrenceana with about two dozen brilliantly coloured flowers, from the collection of W. Thompson, Esq., being all very noteworthy. A very fine Odontoglossum crispum also came from the collection of John Leemann, Esq., West Bank House, Heaton Mersey, the spike bearing ten flowers, nearly four inches in diameter, pure white with deep chestnut blotches. Awards will be made at future meetings, and in cases of difference of opinion voting will be by ballot.

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

At the meeting of the Royal Horticultural Society held at the Drill Hall, James Street, Victoria street, Westminster, on April 13th, Orchids were exhibited in large numbers and in excellent quality, and the awards included nine medals, five Cultural Commendations, three First-class Certificates, and two Awards of Merit.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White) staged a fine well-cultivated group, to which a Silver Banksian Medal was given. It included the handsome Phaius × Marthæ, Epidendrum Endresii, the rare Dendrobium Devonianum album, D. signatum, D. Brymerianum, D. × The Pearl, Cypripedium præstans, Masdevallia × Shuttryana Chamberlainii, M. × Gelenyana, M. leontoglossa, and a very pretty little plant of Leptotes bicolor. Cultural Commendations were given to the three following :—A large specimen of Miltonia cuneata, Cymbidium Devonianum with several fine spikes, and a well-flowered Maxillaria grandiflora. Maxillaria Houtteana gained a Botanical Certificate, as also did cut spikes from a large specimen of Cœlogyne elata.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine) showed a magnificent variety of Odontoglossum × Wilckeanum, called "Queen-Empress," to which a First-class Certificate was deservedly given. The flowers were very large, the ground colour clear yellow, with the petals heavily blotched with brown, the latter colour monopolising nearly the whole area of the sepals. He also sent an infloresence of the handsome O. × excellens dellense.

Major Joicey, Sunningdale Park (gr. Mr. Thorne) staged a fine group, chiefly consisting of splendidly grown and flowered plants of Diacrium bicornutum, to which a Silver Flora Medal was given, largely on account of their excellent culture. He also sent a fine specimen of Dendrobium thyrsiflorum, Odontoglossum Hallii, Epidendrum atropurpureum album, and others.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whiffen) exhibited a fine group, to which a Silver Banksian Medal was given. It consisted of some fine plants of Cymbidium Lowianum at the back of the group, and some good dwarf plants of Dendrobium Jamesianum in front, while the centre was occupied with good forms of Odontoglossum crispum, O. Pescatorei, O. Hallii, O. × Andersonianum, Lycaste Skinneri, &c.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), received a Silver Banksian Medal for a fine group of Odontoglossums, in which good forms of O. crispum and O. × Andersonianum were conspicuous. A very fine form of O. triumphans was also noteworthy, and a large and richly-coloured form of O. luteopurpureum, which has been in the collection for sixteen years.

The Marquis of Camden, Bayham Abbey, Lamberhurst (gr. Mr. Methuen) also staged a good group of Cypripediums, Dendrobium nobile, D. Wardianum, D. Devonianum, and other fine things, to which a Silver Banksian Medal was given.

F. W. Marter, Esq., Lake House, Byfleet (gr. Mr. Bradley) sent a noble specimen of Ansellia africana, bearing nine fine panicles and an aggregate of 800 flowers. The plant has been grown on since 1892, and was awarded a Silver Banksian Medal and a Botanical Certificate.

Sydney Jackson, Esq., Danehurst, Epsom (gr. Mr. Short), exhibited a very large and handsome variety of Odontoglossum × Andersonianum, called Danehurst var., to which an Award of Merit was given.

J. Wilson Potter, Esq., Sligachan, Croydon, received an Award of Merit for a very large form of Odontoglossum Pescatorei, called Sligachan var., having the flowers lightly suffused with pink.

E. J. Johnson, Esq., Bougham Hall, Bury St. Edmonds (gr. Mr. Henley) sent a finely-grown and flowered plant of Cattleya Schröderæ alba, to which a Cultural Commendation was given.

J. T. Bennett Poë, Esq., Holmewood, Cheshunt, also received a Cultural Commendation for a stand of very finely grown Cattleya citrina.

W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), also exhibited a stand of Cattleya citrina, arranged with cut blooms of Cattleya Schrœderæ and maidenhair fern, and received a Vote of Thanks.

Frau Ida Brandt, Riesbach, Zurich, sent Odontoglossum Cervantesii decorum and Epidendrum falcatum.

C. J. Crosfield, Esq., Sefton Park, Liverpool (gr. Mr. Barkley), sent a fine form of Odontoglossum crispum, and some good forms of Dendrobium Wardianum.

Captain Holford, Westonbirt, Tetbury (gr. Mr. Chapman), sent a large form of Lycaste Skinneri, in which the lip was white with a rose-coloured margin.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford) sent a good form of Dendrobium × Clio.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), sent Cattleya × William Murray, and Lælio-cattleya Sir × William Ingram.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan) sent cut spikes of several fine forms of Odontoglossum × Andersonianum, and other Odontoglossums.

Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, staged a splendid group of well-grown plants, to which a Silver Flora Medal was given. It included the handsome Cattleya Schrœderæ amabilis, with peach-coloured flowers and the usual orange tube, Lælio-cattleya × Ascania, the richly-coloured Lælia × Latona, Dendrobium × chrysodiscus, D. × Cybele nobilius, D. × Alcippe, D. × Wardiano-japonicum, the fine Cymbidium × eburneo-Lowianum, Calanthe Textorii, a fine pan of Masdevallia Veitchiana, M. × Asmodia, Oncidium sarcodes, several forms of Epidendrum × Endresio-Wallisii and E. × elegantulum, E. Endresii, a cut growth of E. Wallisii with twenty-four flowers, one spray bearing five flowers, Chysis × Chelsoni, &c. Two handsome hybrids each gained the coveted award of a First-class Certificate, namely, Lælio-cattleya × Digbyano-Trianæ (C. Trianæ ♀ × L. Digbyana ♂), with light rosy mauve flowers, and a beautifully fringed lip, and *Zygopetalum* × Perrenondi eupertium (*Z.* intermedium ♀ × *Z.* Gautieri ♂) a handsome variety with bright violet-purple lip, and green sepals and petals very heavily barred with purple-brown.

Messrs. F. Sander & Co., St. Albans, received a Silver Banksian Medal for a fine group, including Dendrobium Harveyanum, Stenoglottis fimbriata, Phaius × Owenianus, Phalænopsis Boxallii, P. rosea leucaspis, Miltonia vexillaria, some fine Lycaste Skinneri, Cypripedium × Minnie Ames, Cymbidium javanicum, &c. Particularly noticeable in the group was a splendid plant of *Zygopetalum* Burtii, with ten of its striking flowers.

Messrs. Hugh Low & Co., Upper Clapton, also received a Silver Banksian Medal for a fine group, containing Oncidium Kramerianum, Odontoglossum cirrhosum, O. triumphans, O. Hallii, O. luteopurpureum, O. × Andersonianum, Miltonia Roezlii, Dendrobium gratiosissimum, D. thyrsiflorum, &c.

Messrs. B. S. Williams & Son, Upper Holloway, also staged a good

group, containing Eulophiella Elisabethæ, Ada aurantiaca, Lycaste Schilleriana, Oncidium Phalænopsis, O. phymatochilum, Calanthe vestita gigantea, a fine lot of Calanthe Regnieri Sanderiana, Cattleya citrina, C. Mendelii, numerous Odontoglossums, Dendrobiums, and some good plants of Cymbidium Devonianum.

At the meeting held on April 27th, the display of Orchids was much smaller than usual, but included a number of interesting things, eleven awards of various kinds being given, including six medals.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Barrell), staged a fine group, consisting largely of Odontoglossums, to which a Silver Flora Medal was given. It contained a number of fine forms of Odontoglossum crispum, O. Pescatorei Hazelbourne variety, with purple-spotted flowers, the handsome O. × Andersonianum, which is figured at page 305 of our second volume, O. citrosmum, Lycaste aromatica, Epidendrum ciliare, a fine plant of Cattleya citrina with nine flowers, &c.

R. Brooman White, Esq., Arddarroch, Garelochead, N.B., received a Silver Banksian Medal for a very pretty group, containing several very good forms of O. crispum and O. × Andersonianum, with two plants of the handsome Cattleya × Lawre-Mossiæ. A First-class Certificate was given to the beautiful Odontoglossum crispum heliotropium, with bright rose-coloured, very undulate flowers, bearing a few darker spots on the sepals, and more numerous smaller ones on the petals.

The Marquis of Camden, Bayham Abbey, Kent (gr. Mr. Methuen), sent a splendid plant of Denbrobium thyrsiflorum with twenty-seven spikes, to which a Cultural Commendation was given. It had been grown on from a small piece.

Major Joicey, Sunningdale Park (gr. Mr. Thorne), sent a fine raceme of Eriopsis rutidobulbon, and an excellent example of Lueddemannia Pescatorei, with a raceme of seventy-four flowers, a Cultural Commendation being given to the latter.

W. W. Palmer, Esq., Rutland Lodge, Kent, staged a fine specimen of Dendrobium infundibulum, to which a Cultural Commendation was given.

Malcolm C. Cooke, Esq., Kingston Hill, received a Bronze Banksian Medal for an intersting group, containing a finely-flowered Miltonia vexillaria, Sophronitis grandiflora, Masdevallia × Chelsoni, Odontoglossum Hallii, O. crispum, &c.

F. W. Marter, Esq., Lake House, Byfleet, Surrey (gr. Mr. Bradley), showed a fine piece of Lælia purpurata with two racemes, one bearing seven flowers, the other five.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Aldous), sent a very fine form of Odontoglossum Hallii with broad dark sepals and petals, and the lip with white ground.

E. J. Sidebotham, Esq., Bowden, Cheshire, sent the pretty Dendrobium nobile roseum, with flowers of a light cherry-red colour.

Messrs. Hugh Low & Co., Clapton Nursery, staged a fine group, to which a Silver Banksian Medal was given. It included the pretty Odontoglossum × Andersonianum flaveolum with yellow unspotted flowers, some good O. crispum and others, Oncidium Papilio, O. sarcodes, O. phymatochilum, Lælio-cattleya × Schilleriana, some fine Cattleya Mendelii, C. Lawrenceana concolor, Dendrobium Bensonæ, D. lituiflorum, Cypripedium Curtisii, Selenipedium × grande, &c. An Award of Merit was given to Odontoglossum × excellens Lowiæ, a very fine form with a spike of fifteen bright yellow, well spotted flowers.

Messrs. F. Sander & Co., St. Albans, also received a Silver Banksian Medal for a fine group, including a very dwarf Sobralia macrantha Kienastiana, only a foot high, Miltonia Warscewiczii, M. Phalænopsis, some good M. vexillaria and M. v. leucoglossa, Dendrobium Phalænopsis, Masdevallia × Mundyana, Lycaste Skinneri with white lip and similar tips to the petals, Phalænopsis Aphrodite, Cœlogyne tomentosa, Vanda Bensoni, some fine Oncidium Marshallianum, Odontoglossum crispum, O. luteopurpureum, &c.

Messrs. B. S. Williams & Son, Upper Holloway, also received a Silver Banksian Medal for a fine group, containing Eulophiella Elizabethæ, some fine forms of Cattleya Mendelii, C. Lawrenceana, Lycaste Schilleriana, many fine Odontoglossums, Dendrobium Devonianum, D. crystallinum, D. thyrsiflorum, a pretty form of Miltonia spectabilis with some purple marks on the petals and radiating lines on the lip, Calanthe veratrifolia, Oncidium concolor, O. Phalænopsis, Ada aurantiaca, the pretty Trichocentrum tigrinum, Vanda suavis, Cypripedium × vexillarium, C. × Io grande, C. Boxallii, C. barbatum Warneri, &c.

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The Council of the Royal Horticultural Society have issued a circular reminding exhibitors that the object of the bi-monthly meetings of the various Committees was to allow any new or rare flower or fruit to be exhibited and submitted to a body of experts at a time when they were in perfection. A practice has now grown up of exhibiting groups and collections of well-known old plants at these meetings, under which circumstances there is some danger of the more important work of the Committees being lost sight of. The Council are grateful to the various exhibitors by whose efforts the Drill Hall has been kept well filled, but they feel that the time has now arrived when some limit must be imposed, and they have therefore drawn up certain regulations, which the Superintendent is instructed to see carried out. In the case of new or rare plants submitted to the notice of the various Committees no alterations whatever will be made in the existing regulations, but intending exhibitors of groups

and collections must give notice to the Secretary not later than the Friday before each meeting, stating the nature of the exhibit, and the amount of space required, which must not in any case exceed 100 square feet. Groups for different Committees will be considered as distinct exhibits, but no admixture will be allowed, except that a few foliage plants may be used among Orchids as a dressing. Large specimen plants exhibited separately on the floor of the Hall are exempted from these conditions. Should the applications at any time exceed the space at disposal, exhibitors will be informed by post how much space can be placed at their disposal.

## ORCHID PORTRAITS.

CALANTHE × BARON SCHRÖDER.—*Gard. Mag.*, April 24, pp. 240, 241, with fig.

CYMBIDIUM TRACYANUM.—*Journ. Hort.*, April 1, p. 267, fig. 59.

CYPRIPEDIUM × REGINA.—*Gard. World*, April 24, p. 537, with fig.

DENDROBIUM JOHNSONIÆ, F. Muell.—*Garden*, April 10, p. 262, t. 1113.

DENDROBIUM NOBILE—a specimen plant.—*Journ. Hort.*, April 8, p. 295, fig. 64.

EPICATTLEYA × MATUTINA.—*Gard. Chron.*, April 10, pp. 232, 233, fig. 77.

GONGORA TRICOLOR, Rchb. f.—*Bot. Mag.*, t. 7530.

LÆLIO-CATTLEYA × ROSALIND.—*Gard. Mag.*, January 9, pp. 20, 21, with fig.

ODONTOGLOSSUM CRISPUM LINDENI.—*Gard. Chron.*, April 24, pp. 268, 269, fig. 91.

ODONTOGLOSSUM CRISPUM LUCIANI.—*Gard. Chron.*, April 24, p. 268, fig. 90.

ONCIDIUM MACRANTHUM.—*Journ. Hort.*, April 22, p. 337, fig. 71.

PHALÆNOPSIS AMABILIS, Blume.—*Rev. Hort.*, April 1, p. 150, fig. 54.

PHALÆNOPSIS APHRODITE.—*Rev. Hort.*, April 1, p. 151, fig. 55.

## CORRESPONDENCE, &c.

H. J. R., Florence.—Dendrobium Farmeri, pale variety.

C. C. H., Hinckley.—Dendrobium undulatum.

R. B. M., Lancaster.—The Dendrobium which came home with D. Devonianum is D. transparens.

T. L. M., Florida.—A rather small-flowered form of Dendrobium suavissimum

W. S. E., Dorking.—Cyrtopodium punctatum.

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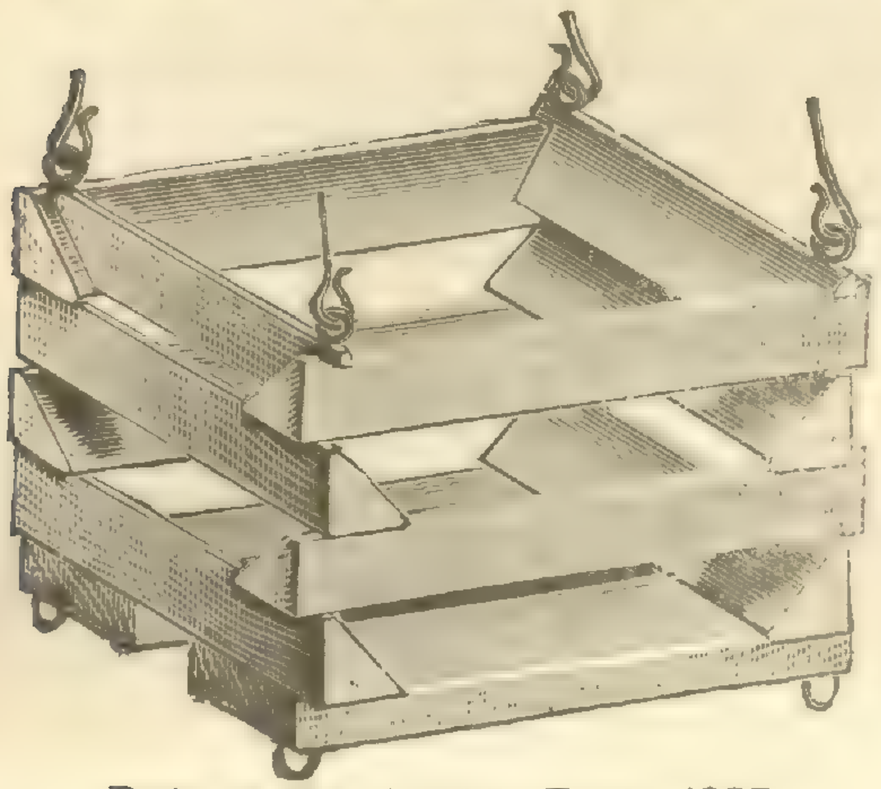

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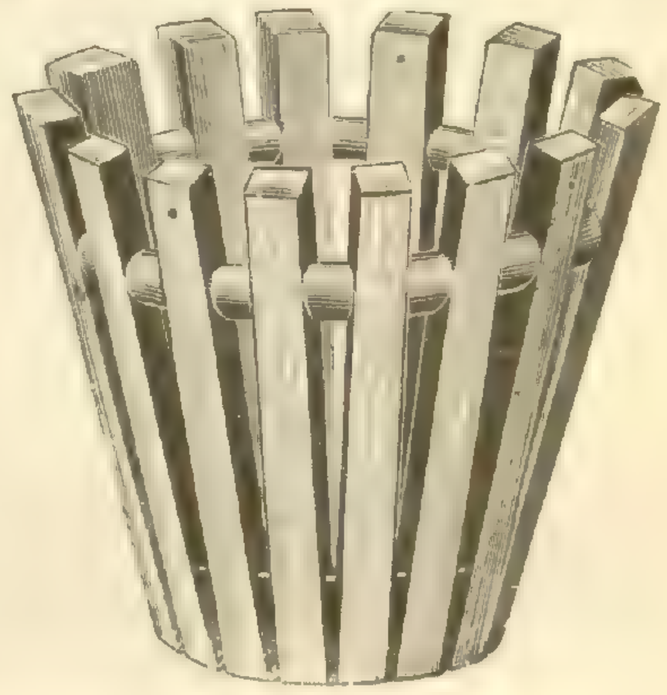

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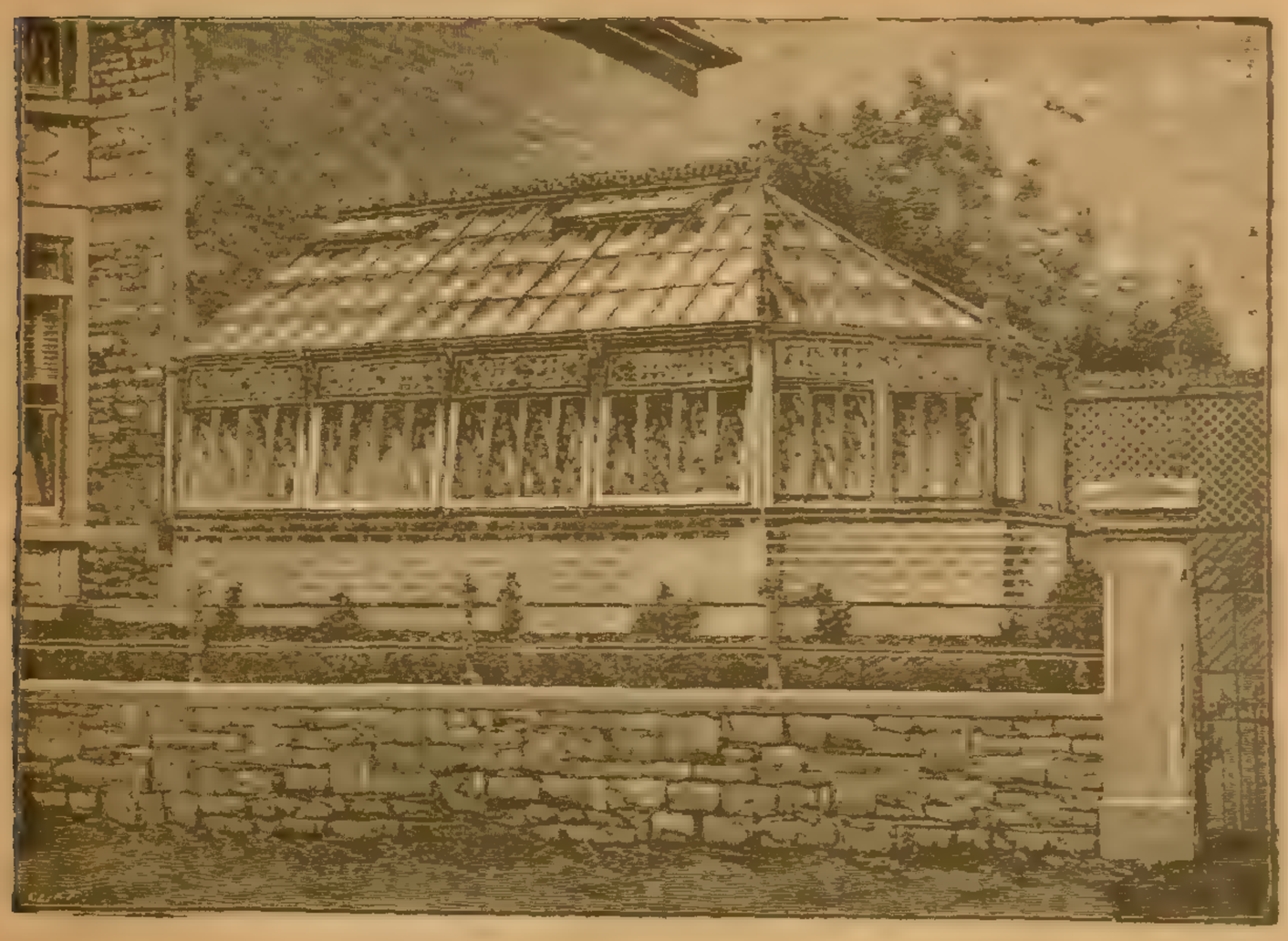

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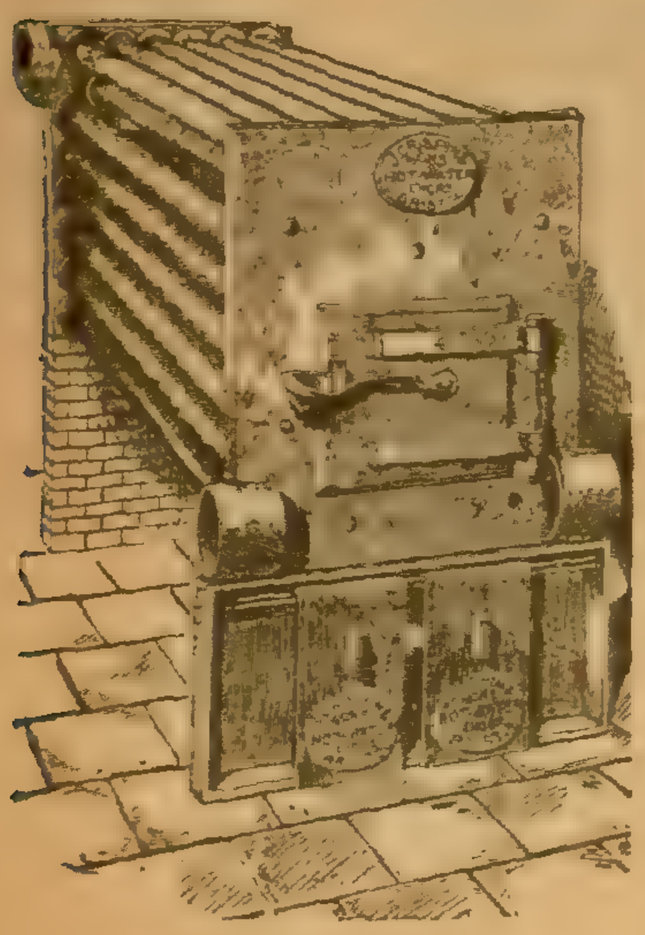

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# THE ORCHID REVIEW:

## An Illustrated Monthly Journal,

## *DEVOTED TO ORCHIDOLOGY.*

Contents.


| | PAGE |
|---|---|
| An Amateur's Notes ... ... ... | 167 |
| Botanical Orchids at Kew ... ... | 168 |
| Calendar of Operations for June ... | 171 |
| Cœlogyne asperata ... ... ... | 164 |
| Correspondence, &c. ... .. ... | 192 |
| Curious crosses ... ... ... | 179 |
| Curious Cypripedium seedlings ... | 170 |
| Dies Orchidianæ ... ... ... | 165 |
| Disa lugens ... ... ... ... | 180 |
| Disa Harveiana ... ... ... | 180 |
| Hybridist ... ... ... .. | 169 |
| Cattleya × intricata Rossiana ... | 169 |
| Cypripedium × conco-bellatulum ... | 169 |
| Cypripedium × Chapmanii magnificum ... ... ... ... ... | 170 |
| Lælio-cattleya × Canhamiana var. Lady Wigan ... ... ... | 169 |
| Lælio-cattleya × tyntesfieldense ... | 169 |
| Lælia purpurata Ashworthiana ... | 168 |
| Manchester and North of England Orchid Society ... ... ... | 181 |
| Notes ... ... ... ... ... | 161 |
| Odontoglossums from Kelvinside ... | 175 |
| Orchid Portraits ... ... ... | 192 |
| Orchids at the Royal Horticultural Society ... .. ... ... | 183 |
| Phalænopsis culture at New York ... | 177 |
| Phalænopsis Schilleriana (Fig. 9) ... | 177 |
| Stenoglottis longifolia alba ... ... | 176 |
| Temple Show ... ... ... ... | 185 |
| Vanda pumila ... ... ... .. | 167 |
| Varieties, are they constant ? ... ... | 183 |


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# THE ORCHID REVIEW.

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## NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James' Street, Westminster, during June, on the 15th and 29th, respectively, when the Orchid Committee will meet at the usual hour, 12 o'clock, noon.

We have received from Messrs. James Veitch & Sons some examples of handsome hybrids raised in their establishment, including the handsome Epidendrum × O'Brienianum var. roseum, which is more rose-coloured than the type; a brilliant form of Epiphronitis × Veitchii, out of the same seed-pod as the original form; Chysis × Sedenii, and Cypripedium × Enid, a pretty little hybrid from C. bellatulum ♀ and C. Spicerianum ♂. The latter cross was made by the Hon. Walter Rothschild, but the seedlings were raised and flowered by Messrs. Veitch.

The handsome Chysis × langleyensis is also enclosed, and we are informed that the parentage of this plant is C. bractescens ♀ × C. × Chelsoni ♂, not as recorded at page 187 of our last volume, on the occasion of its receiving an Award of Merit from the R.H.S., when C. × Sedenii was given as the seed parent.

A flower of the handsome Cœlogyne asperata has been sent from the collection of Mrs. Barton, High Bickington, N. Devon, which flowered out of an importation from Sarawak, Borneo. It is a plant which many do not succeed in growing well, but should be grown in the warm house and receive similar treatment to C. pandurata from the same region. It is a very striking Orchid when well grown.

Flowers of the handsome Odontoglossum × Andersonianum egregium are sent from the collection of R. Brooman White, Esq., of Arddarroch. The sepals and petals are suffused with rosy purple on a light yellow ground, and much spotted with chestnut brown. It received a First-class Certificate a few years ago.

A very pretty form of Lælia purpurata comes from the collection of G. Marchetti, Esq., Manor Heath, Halifax. The flower is pure white, except the front lobe of the lip, which is prettily suffused and veined with light rosy lilac on either side of the nearly white centre, the disc being light yellow. Another from the collection of H. Greenwood, Esq., Highfield, Haslingden, Manchester, is more distinctly veined, and the disc is deeper yellow, otherwise they are very similar, and approach the variety Russelliana.

We have received the programme of the 14th International Horticultural Exhibition of the Société Royale d'Agriculture et de Botanique de Gand, which will be held from April 16th to 24th, 1898. Seventy-two classes are set apart for Orchids, all the principal cultivated genera being represented, prizes also being offered for novelties, both introduced and raised artificially. A Williams Memorial Medal is offered for the best fifteen exotic Orchids in strong examples.

A beautiful six-flowered raceme of Cattleya Lawrenceana is sent from the collection of W. H. Lumsden, Esq., Balmedie, Aberdeenshire, by Mr. Roberts. The plant has three such racemes with an aggregate of eighteen large and richly-coloured flowers.

Several species of Oncidium have flowered among importations of O. macranthum, presumably because they so much resemble it as not to be distinguished when out of flower. Flowers of the handsome O. monachicum, sent from the collection of H. H. Noble, Esq., Mossly Hill, appeared in this way out of Messrs. Cowan's importations. It is remarkable for having the petals united at their apex, forming a ring, as is the allied O. serratum.

Flowers of a very pretty seedling Cypripedium raised between C. Lawrenceanum are sent from the collection of Captain Hincks, of Richmond, Yorks. It is a form of C. × Gowerianum, and shows well the characters of its two parents.

A very beautiful form of Cattleya Mendelii, sent from the collection of John Falconer, Esq., Lasswade, Midlothian, has blush sepals and petals, and a pure white lip with very rich crimson-purple front lobe, and the usual bright yellow disc. A second form is very similar, but the front of the lip

is lighter in colour, and the flower is much more fragrant. A good light Cattleya Schrœderæ and two forms of Lælia purpurata are also enclosed, one being the variety prætexta, characterised by having a broad white area in front of the lip.

Two very fine forms of Lælio-cattleya × Schilleriana are sent from the collection of R. H. Measures, Esq., The Woodlands, Streatham, one having the sepals and petals tinged with light blush, and the lip white except the deep purple front lobe; the other having white flowers with a very broad purple band at the apex of the side lobes, and some purple lines extending to the base of the disc. At the apex of the deep purple front lobe is a white area, as in some forms of the Lælia purpurata parent, whose influence is very marked, though in the strongly three-lobed lip they resemble Cattleya intermedia, the other parent.

A very curious flower of Cattleya Mossiæ comes from the collection of W. H. Scott, Esq., St. Oswin's, Tynemouth, in which the dorsal sepal is completely united down the centre to the back of the column, and the sides reflexed, forming a double wing, with a smaller additional wing on either side from the line of junction. The plant on which it occurs is a fine form, with a rich orange zone right across the lip.

A remarkable flower of Cattleya intermedia is sent from the collection of E. Ashworth, Esq., Harefield Hall, Wilmslow. It consists of two sepals, placed laterally, and two lips at right angles to them, opposite, and one within the other, and a short, straight, laterally dilated column. The supernumary lip, which enfolds the normal one, is apparently composed of the two united petals, with possibly the addition of the anther, which is absent, and the dorsal sepal is also absent. It is probably an accidental production.

A flower of the handsome Odontoglossum sceptrum aureum is sent from the collection of W. Thompson, Esq., Walton Grange, Stone. The ground colour is light yellow, and the markings very light brown; the much-toothed petals being very handsomely spotted, and the sepals almost suffused with the latter colour. O. crispum Annie is a fine form, the centre of the sepals and petals being tinged with light rosy purple, and blotched with deep red-purple, and the lip and base of the petals bearing also a number of small spots. Both received awards at Manchester and the Temple Show. A very fine O. luteopurpureum hystrix, also enclosed, measures 4¼ inches across the petals.

## CŒLOGYNE ASPERATA.

A PLANT of this handsome Bornean species was exhibited by Messrs. Hugh Low & Co., at the Temple Show, and received a Botanical Certificate under a new name, which appeared in the official list of awards, but need not be further recorded, though it affords a striking comment as to the way so fine a plant has been almost lost sight of in gardens. It was described by Lindley, in 1849 (*Journ. Hort. Soc.*, IV, p. 221), from a plant which flowered in the collection of T. T. Hodges, Esq., Hemsted Park, "in such profusion, that not fewer than eight spikes were produced at the same time," each about a foot in length, and bearing from twelve to fourteen flowers, pale cream in colour, the lip with a large rugged, orange-brown disc, and numerous nerves radiating to the margin. Shortly afterwards it was described and figured under the name of C. Lowii (*Paxt. Mag. Bot.*, XVI, pp. 225, 226, with plate, fig. 1, and woodcut), where it is said to have been discovered by Mr. Hugh Low, Junr., and sent to Clapton, in October, 1845, and that it first flowered in cultivation in the collections of S. Rucker, Esq. and Mr. Halford, in May, 1848. It was found in low marshy grounds on the banks of the Sarawak River, and is said to be a plant much prized by the natives. On this latter point an interesting article will be found at page 294 of our last volume. There is a good figure in the *Orchid Album* VII, t. 311. It is curious how rare so handsome a plant should be in this country, for we have been told that it is very commonly cultivated in Singapore, and we believe that it suceeds under the treatment given to C. pandurata.

## AERANTHES DENTIENS.

A RATHER distinct species of Aëranthes was included in the group exhibited by Sir Trevor Lawrence, Bart., at the Temple Show, which evidently agrees with A. dentiens, Rchb. f., a Madagascar species described in 1885 (*Flora*, LXVIII, p. 381), from a cultivated specimen, but without any further note of its origin. There is also a specimen preserved at Kew, which flowered in the collection in March, 1883, the plant having been received from Lady Ashburton. It differs from the well-known A. grandiflorus, Lindl., in having much shorter less acuminate sepals and petals, and the spur simply clavate, instead of suddenly inflated on the lower side. The plant exhibited seems undeveloped, as the scape was rather short, while in the Kew piece it measures two feet long, but wild dried specimens are somewhat intermediate in this respect. The flowers are light green and the sepals and petals from 1 to 1½ inches long.

R. A. R.

## DIES ORCHIDIANÆ.

THE great Temple Show has again come and gone, and the display of Orchids was as good as ever, in some respects probably better ; at all events examples of good culture were numerous, and fine varieties of well-known species were abundant. The groups staged by Baron Sir Henry Schröder and Sir Trevor Lawrence were superb, the former being the showier group, and the latter containing a more representative collection, by reason of the numerous botanical "gems" it contained. It would be interesting to know how many different species were contained in this group. There were several other beautiful groups from amateur growers, and the trade collections were excellent. If a fault could be found it was that they were too much alike, and it was quite a relief from the prevailing monotony to turn to the small group of choice Odontoglossums from the collection of W. Thompson, Esq., or the beautiful series of white forms of Cattleya Mossiæ sent by M. A. Piret. The absence of competitive classes tends to this kind of thing, and a little more classification in the way of groups of Cattleyas, Odontoglossums, &c., would introduce a little welcome variety.

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In one respect, at all events, the Show much resembled preceding ones, namely, in the difficulty of ascertaining the limits of the different groups, and I observed the reporters struggling with this difficulty in several places with rather indifferent success, and I verily believe that to this day it is a matter of uncertainty to which group certain plants belonged. Probably the exhibitors knew all about it, but that is not the point, and it would be a very easy matter to make a dividing line of some kind. The Show was such a success in other respects that little matters of this kind may be passed over lightly, and let us hope they may not be so noticeable on future occasions.

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I observe a note in the *Gardening World* for May 1st (p. 549) respecting the handsome Odontoglossum × Wilckeanum Queen Empress to which the Orchid Committee awarded a First-class Certificate on April 13th last. It is stated that this plant is simply a subdivision of one now in the collection of H. T. Pitt, Esq., Rosslyn, Stamford Hill, which was purchased at Messrs. Protheroe and Morris' Rooms for 105 guineas, and described in that paper on January 30th last (p. 343) under the name of O. × Pittiæ. It is therefore claimed that this name has the right of priority, and the more recent one should be dropped. This is a nice little point for our authorities to decide, but I fancy the writer has overlooked one little detail. No claim of priority can be set up for an incorrect name, and this plant is unquestionably a variety of O. × Wilckeanum, or rather O. × Denisoniæ, which has the right of priority for hybrids between O. crispum and luteopurpureum. How

far it is distinct from previously named varieties I will not undertake to say, and it would be as well to get this point settled before giving it more names.

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This calls to mind the case of the handsome Odontoglossum crispum apiatum. This name, I believe, was given at a meeting of the Orchid Committee, in the belief that it was quite new. Some time after a writer in *Le Jardin* affirmed that it was O. crispum Duvalii, figured and described in the *Orchidophile* for 1886 (p. 255, with plate), and the very identical plant, its history being given in detail. The original name in some way seems to have been completely lost sight of. In this case there is no doubt about which is the correct name, and it is unfortunate that a new one should have been imposed. The worst of it is that these are not two isolated cases, or a remedy would easily be found.

---

The fact is the nomenclature of varieties is in a most unsatisfactory condition. As Mr. Chamberlain pointed out the other day in the *Review*, their nomenclature is even worse than that of hybrids, and that is bad enough. Everybody at his own sweet will and pleasure affixes a new name to anything that strikes his fancy, and as there is no rule and no authority so there is no limit to the abuse of this practice. And the result is lamentable. I hardly ever attend a meeting without finding several of these new names, often applied to old friends, and they are carefully recorded in many of the reports—the names that is, not how to distinguish the varieties which they are supposed to represent, which is quite another matter—until the whole thing has become a complete farce, and the prospect of an orderly and scientific nomenclature is every day becoming more remote. This is the result of the present go-as-you-please policy.

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I have just been handed a copy of the Rules of the Manchester and North of England Orchid Society, in which I find a clause (rule 12) setting forth that "the Committee shall cause a flower from every plant receiving a First-class Certificate to be painted by an artist at the expense of the person owning the plant, and such painting shall be the property of the Society and shall be kept by the Hon. Secretary in a suitable and secure place for purposes of reference." If the Society would extend the rule so as to include every plant exhibited under a new name perhaps it would afford an efficient check to the ever-increasing multiplicity of useless names. Some drastic measures ought to be adopted to check this glaring abuse.

ARGUS.

## VANDA PUMILA.

A PLANT of a rare little Vanda which is seldom seen in cultivation was included by Messrs. Hugh Low & Co. in their group at the Temple Show. It is nearly allied to V. cristata, and was considered a variety of it by Lindley (var. B, *Lindl. Fol. Orch., Vanda*, p. 10). It differs, however, in having a strong conical spur, and in the absence of the characteristic horns at the apex of the lip, as well as in the colour of the flower, which is cream-white, streaked with purple on the fleshy lip. It is also rather smaller than V. cristata and V. alpina, Lindl., which it resembles in general habit, and is now known as Vanda pumila (*Hook. f. Fl. Brit. Ind.*, VI, p. 54). It is a native of Bhotan and Sikkim, at an elevation of about 2,000 feet.

R. A. R.

## AN AMATEURS' NOTES.

THE other day the question was asked, Which is the best season for Orchids? I would reply the month of May, for at the moment of writing there is a profusion of bloom which will not be equalled until the season comes round again. Among Cattleyas are found the beautiful and variable forms of Mossiæ, Mendelii, the brilliant Lawrenceana, Skinne i, and Warscewiczii, together with such striking species as citrina, Aclandiæ, Schilleriana, intermedia, and dolosa, which does not exhaust the list. Lælia purpurata, with its numerous forms, is a host in itself, and the richly coloured tenebrosa is a worthy companion. Odontoglossums furnish quite a series of beautiful forms, of which crispum is naturally placed first, followed by its various hybrids, and the species luteopurpureum, Hallii, cirrhosum, hastilabium, polyxanthum, and others which need not be enumerated. Oncidiums concolor, Marshallianum, varicosum, and macranthum are at their best, also Vanda teres, the Thunias, Cymbidium Lowianum, Miltonia vexillaria, Dendrobiums Bensonæ, Dearei and chryso-toxum. These, together with a few late representatives of spring-flowering things and a few precocious examples of summer-bloomers, are now making a really brilliant show.

I have not mentioned the Cypripediums, but barbatum, Lawrenceanum, Stonei, Rothschildianum, and several other species, and the inevitable hybrids, are now in great form. Then there are Masdevallias Harryana, Veitchiana and some of the Chimæra group, the graceful Brassia verrucosa Aërides Fieldingii, Epidendrum vitellinum, Cochlioda Nœtzliana, and numbers of other interesting things, which serve to give variety and tone down the brilliancy of the showier forms. At no other period of the year is the display quite as rich and varied as at the present.

AMATEUR.

## BOTANICAL ORCHIDS AT KEW.

A VERY pretty little Orchid seldom seen in cultivation is now flowering at Kew, namely Cryptochilus sanguineus, a Himalayan species with erect spikes of deep red flowers, and the sepals united into a tube, quite an unusual character in the group. Sarcochilus aureus and S. unguiculatus are two curious little plants, the latter remarkable in its habit of opening several flowers on the raceme, which last only about a day, and then remaining quiescent for some time, when a few more flowers again expand together, the raceme thus gradually lengthening until the flowers are exhausted. Promenæa xanthina forms quite a picture, a dense tuft of leaves with numerous yellow flowers spotted with brown on the lip. A good clump of the pretty little Megaclinum minutum is also covered with its curiously flattened spikes. Then there is Luisia Cantharis, with flowers almost exactly resembling a beetle, the rare and pretty little Meiracyllium gemmæ, with its purple flowers and Sophronitis-like habit, the graceful Platyclinis longifolia, Cœlogyne Schilleriana with three flowers, and the smaller C. uniflora.

Masdevallias include M. Carderi, ionocharis, erythrochæte and Rolfeana, and Pleurothallis stenosepala is a fine specimen covered with graceful racemes. Among other interesting things may be mentioned the pretty little Eria extinctoria, Trichopilia laxa, Dendrobium Podagraria, Saccolabium gemmatum, Sarcanthus hongkongensis, the pretty little Epidendrum bracteatum, Habenaria rhodochila, &c. Many of these plants are very easily grown and take up little space, and if some of them are not showy they give a great additional interest to a collection of Orchids.

## LÆLIA PURPURATA ASHWORTHIANA.

A FLOWER of the beautiful Lælia purpurata Ashworthiana is sent from the collection of E. Ashworth, Esq., Harefield Hall, Wilmslow. It is remarkable for the shape and colour of the petals, which measure over two inches broad, and are deeply stained and nerved with purple, except at the apex and basal margins, these being white. The front of the column and disc of the lip are also strongly stained with purple, while the latter is yellow in ordinary forms. In short, the flower is in a peloriate condition, and the petals approach about half way towards the lip in general character, being analogous in this respect with Dendrobium nobile Cooksoni, and, like it, proves permanent in character. Another point common to both is that the petals do not spread, as in normal forms. The present variety is one of the most distinct varieties we have seen, and strikingly handsome.

## THE HYBRIDIST.

### CATTLEYA × INTRICATA VAR. ROSSII.

THIS is a very pretty hybrid derived from Cattleya Leopoldi ♀ and C. intermedia ♂, which was exhibited by Messrs. F. Sander & Co., St. Albans, at the Temple Show. The plant bore three good racemes of flowers, most resembling C. intermedia in shape, but the sepals and petals strongly suffused with rose-pink and spotted with purple, as in C. Leopoldi. The lip is strongly three-lobed, the front lobe being brilliant purple, and the remainder suffused like the sepals and petals except in the absence of spots. It is particularly interesting, because derived from the two supposed parents of the natural hybrid C. × intricata, and the general resemblance is so great that the present one must be considered as a variety of C. × intricata, whose origin is thus demonstrated.

### LÆLIO-CATTLEYA × TYNTESFIELDENSE.

A splendid hybrid of unrecorded parentage was exhibited at the Temple Show by G. W. Law Schofield, Esq., New-Hall-Hey, Rawtenstall, Manchester, and was awarded a First-class Certificate. It clearly combines the characters of Lælia purpurata and Cattleya Dowiana, and there can be little doubt of its descent from these two species. In general shape it resembles the hybrids from Lælia purpurata and a Cattleya of the labiata group, and the influence of the former species is apparent in many features of the flower. Cattleya Dowiana, on the other hand, comes out strongly in the dark and richly-coloured lip, with traces of golden veining inside the throat, and the same influence is also discernible in the sepals and petals, which are cream-coloured, tinged and somewhat veined with light rose. The lip is a deep velvety ruby-red, deepening to maroon at the mouth of the throat, with the afore-mentioned yellow marbling inside. It is one of the most brilliant of the C. Dowiana hybrids. Respecting its origin we are without information, except that it was purchased by F. Hardy, Esq., at one of Messrs. Protheroe & Morris' sales, without record of its parentage.

### LÆLIO-CATTLEYA × CANHAMIANA VAR. LADY WIGAN.

This is a most beautiful variety, derived from Lælia purpurata Russelliana ♀ and Cattleya Mossiæ aurea ♂, for which Messrs. Charlesworth & Co. received a First-class Certificate at the Temple Show. The flowers are very large and of excellent shape, the sepals and petals being blush-white, and the lip pinkish white, with some purple markings on the disc and bright yellow inside the throat.

### CYPRIPEDIUM × CONCO-BELLATULUM.

A handsome hybrid Cypripedium, exhibited at the Temple Show by T. Statter, Esq., Stand Hall, Whitefield, Manchester, to which an Award of

Merit was given. We have no record of its history, but from the name given we presume it to be a seedling from C. concolor crossed with bellatulum. The flower is light yellow spotted with purple-brown, and much resembles some forms of C. Godefroyæ, which there are grounds for suspecting may be a hybrid derived from this parentage.

### CYPRIPEDIUM × CHAPMANII MAGNIFICUM.

The original Cypripedium Chapmanii was derived from C. Curtisii ♀ and C. bellatulum ♂, and the present from the reversed cross. The latter was exhibited at the Temple Show by R. I. Measures, Esq., Cambridge Lodge, Camberwell, and received a First Class Certificate. It is a large and handsome hybrid, most like C. bellatulum in shape, and chiefly differs from the type in having lost the greenish area at the apex of the dorsal sepal, that organ being regularly striped and reticulated with purple on a cream-white ground. The petals are thickly covered with small purple spots, and the lip and staminode are most like C. bellatulum. It is a very handsome variety.

## CURIOUS CYPRIPEDIUM SEEDLINGS.

A twin-flowered scape of a seedling Cypripedium has been sent from the collection of Reginald Young, Esq., Sefton Park, Liverpool, which has a curious history. A flower of C. callosum was hybridised in December, 1892, with the pollen of C. × microchilum, the pod swelled, and the seed was sown in December, and in May following seedlings appeared. The first has now produced a twin-flowered scape, and curiously enough no trace of the pollen parent can be detected, as the flowers are indistinguishable from those of C. callosum. Whether the remaining seedlings will behave in the same way remains to be proved, but Mr. Young states that the cross was most carefully made and recorded, and there is no possibility of mistake as to the history of the seedlings. It recalls the case of C. barbatum crossed with niveum in the same collection, recorded at page 309 of our last volume, where the seedlings flowered as C. barbatum instead of C. × Tautzianum, as was expected, and is as inexplicable as the freaks of Zygopetalum Mackayi, which have been recorded. The very fact that Cypripediums hybridise so readily increases the difficulty of offering an explanation, and we shall hope to hear of the behaviour of the remaining seedlings; also of any similar cases which may have occurred in other collections.

## CALENDAR OF OPERATIONS FOR JUNE.

By W. H. YOUNG, Clare Lawn, East Sheen.

By the time this appears in print we may safely assume that fire-heat will no longer be required in the Cool and Intermediate houses, and, given typical summer weather, very little will be needed in the other houses, though the fires should always be kept in, and a gentle circulation of heat maintained in the pipes of the Phalænopsis and East Indian houses. It should also be employed at night in the Cattleya house, to drive away surplus moisture, and also that more air may be admitted through the bottom ventilators. Plants in bloom should be kept moderately dry, excepting where root action is vigorous, as will probably be the case with such species as Cattleya Warscewiczii (gigas), Warneri, and Schilleriana.

It is a practice in some establishments to have a house or compartment set aside for the display of Orchids when in bloom, but, except in very few instances, the removal of plants from their growing quarters is generally attended with injurious results, which, unfortunately for the grower, are not immediately apparent, and consequently it is difficult to convince the owner that such is the case some months after their return. There is one thing to be said in favour of their removal, and that is, there is a better chance of giving those left behind a more generous treatment, for where there are no flowers to be studied, damping and syringing may be carried out more fully than it could be otherwise, if we have any regard for the bloom.

There is little to add concerning the cool Orchids to what was treated of in last month's Calendar, excepting that on dry, hot days the plants may be sprayed overhead morning and afternoon, always taking the precaution to use clean water, or a sediment will be deposited on the leaves and flowers. The Disas should now be in a frame, situated in a cool and shaded spot, and syringed frequently, to keep the surrounding atmosphere moist. Bletia hyacinthina may be stood outside in the open, but kept well supplied with water. Thunias also, after they have flowered, may, about the end of the month, be placed in a sunny position outside, to ripen their newly-made bulbs. Those bulbs that have not produced flowers will, if kept in heat, continue growing almost indefinitely, but by placing them outside they finish up their growths, and become well matured, and thus be better able to go through the long resting period without rotting off. Of course, abundance of water must still be supplied right until they are taken in at the end of the summer.

Anguloas flower in May and June, and should, if needed, be repotted immediately the blooms are removed. Being strong and vigorous-growing subjects, fairly large pots are required for their accommodation. These should be about two-thirds filled with drainage, and the compost used should

consist of two parts peat, one part fibrous loam, and the remainder of moss and sand or finely-broken crocks. During the growing season the plants should be placed in an intermediate temperature, and afforded a liberal supply of water, always taking care that the soil is becoming dry before giving a fresh application. Along with the above may be grown Lycaste aromatica, cochleata, consobrina, and cruenta, all of which flower about now, the flower-buds appearing at the same time as the new growths, but new roots only come when the latter have made some considerable progress; therefore repotting or top-dressing should be done immediately the flowers are over. The compost used and the treatment advocated for the Anguloas will suit these, as well as the following Lycastes:—L. Skinneri, macrophylla (plana), lanipes, Barringtonæ, mesochlæna, costata, Cobbiana, &c., which may all be attended to now. Oncidium tigrinum produces better results when grown in an intermediate temperature than when subjected to cool treatment. It has been in a state of rest since maturing its bulbs last season, but is now beginning to grow again; yet, until the flower-spikes appear in the young growths, no larger quantities of water should be given. When these are apparent, fresh peat and moss should be applied, if a shift into a larger pot is not needed. Afterwards more water may be given, though those that have been disturbed should have less frequent applications than those only re-surfaced.

In the Cattleya house C. Warscewiczii and its varieties will require immediate attention so soon as the flowers are over, for then new roots push out from the new bulbs, which seem to thrive much better in new material than in the old. Those having grown over the sides of their pots should be shifted into larger ones of a suitable size to accommodate the old pot —which should be broken, but not detached from the roots—and to allow sufficient room for the extension of a couple of seasons' growth. Water sparingly for a short time afterwards to prevent the bruised roots rotting more than can be helped. C. Gaskelliana, like the above, produces its flowers simultaneously with the development of the growths, and root action also takes place just previous to the flower-buds appearing in the sheath. However, if any need re-potting, they should be done just as the latter emerge from the base of the new bulb, whether the plant has flowered or not. C. Dowiana and its varieties, also the natural hybrids C. × Hardyana and Massiana, require during their growing season the warmest and brightest spot to be found in this house, and should be given new material when root action takes place, but do not give over much water until the sheaths are visible. C. Eldorado should have a light position near the glass in the stove during its growing season, also C. granulosa, Schofieldiana, guttata, and others of this section. Little moisture at the root should be the rule with these, even when growing, for although in this

state little root action goes on until the bulbs have almost reached their full development, then they may have new material and be given a more bountiful supply of water. It is absolutely necessary that these should ripen their tall, stem-like bulbs before the winter sets in, or they will in all probability fail to pass through scathless. C. Rex has not fulfilled all the good things expected of it, especially in matters cultural. As we do not know the conditions under which it grows in its native state, we have to surmise, and experiment to find out its requirements, and often this means the sacrifice of one's plants without arriving at any definite result. We are informed that it should always be kept in a moist condition, but, unfortunately for us, the moisture was too much for our plants, as they died an unnatural death.

As soon as Dendrobium thyrsiflorum, densiflorum, Farmeri, clavatum, moschatum, and others of this section, have gone out of bloom, they will soon commence to grow, and when the elongation of the young bulb has reached the foliate stage, roots will appear at the base, and any re-potting or top dressing should then be done. The best fibrous peat, freed from all its finer particles, should be used, with a small proportion of clean living sphagnum. The quantity used to each should only be about an inch in depth, the remainder of the receptacle being filled with clean drainage. Secure the bulbs to a stake or two placed in the middle of the plant to keep it in shape, and water sparingly until the roots have worked their way into the new material. The lovely D. Falconeri should be grown in an airy part of the Cattleya house, either on a block or raft or in shallow pans or baskets. In either case very little material should be used, for although abundance of water is needed during the growing season, the plants do not relish a soddened base. The small leaves of this species are very subject to the attacks of red spider, and to keep this pest at bay the plants may be given a bath for an hour or so daily. Re-potting is seldom necessary, as its mode of growing is more of a branching character rather than an extension at the base. Fresh material, however, may be given where any of the old can he picked out without damaging the fine wire-like roots. D. chrysotoxum and suavissimum flower and proceed to make new growth at the same time, but little root action is seen until the flowers are over, when potting or other necessary operations sould be attended to. These enjoy a short and quick growing seaon, and afterward a long rest.

Arundina bambusæfolia is an Orchid seldom grown, yet when seen in flower always commands attention and well-merited admiration. It is a plant that likes a stove treatment all through the year. Just now it is pushing forth its new grass-like stems, and should, if needed, be repotted, using pots three parts filled with drainage, and a compost of two parts peat, one of fibrous loam, and some chopped moss and sand or finely-broken

crocks. It requires a good supply of water at all times, though, of course, the quantity and frequency of application will vary according to the season. After it has flowered in the late autumn, young growths appear on the stems, which, if taken off now, with a portion of the old stem, and inserted in a mixture of half chopped moss and the other half finely-broken crocks, and given an abundance of water, will soon root, and later on may be potted on and treated like the other plants. The pretty Spathoglottis Kimballiana is now in bloom, and it is also making new growths. It is rather late to repot, but if the surface be untidy it should be picked off, and replaced with a portion of the following mixture: Two parts peat, one of loam, one of chopped moss, and sufficient sand to render it porous. A moist, warm spot in the East Indian House should be selected for it, and always be well supplied with water. S. Vieillardii thrives in the same compost, but a slightly drier treatment is necessary to its well-being. Platyclinis glumacea having finished growing, should be removed to where a cooler atmosphere is maintained. P. filiformis is now commencing to grow, and should, therefore, have more water given it. It appears to thrive best when planted in a basket or a perforated pan, and suspended from the roof of the Cattleya house. It is difficult to give new material without repotting, by reason of the crowded state of the small pseudobulbs, and as it does not take very kindly to any disturbance at the root, it should be left alone so long as it is doing well. When shifted, a compost of one half peat, and the other half consisting of fibrous loam, moss, and finely-broken crocks, should be employed. After the bulbs have matured, very little moisture at the root is needed to keep it in good condition.

Sobralias used not to be very much sought after, but since the introduction of such lovely species and varieties as leucoxantha, xantholeuca, Lowii, Lucasiana, and the white forms of macrantha, they have acquired a more exalted position in the opinion of Orchidists. They flower at various seasons of the year, and consequently the bulk cannot be repotted at the same time, and for this and other reasons each has to be studied individually, and operated upon when in a suitable condition, and that is generally a few weeks after the plant has flowered. The majority of these grow well in a warm Intermediate house, or at the coolest part of a Cattleya house. They should have well-drained pots or pans, and over the drainage should be placed a good layer of rough moss or other suitable material, to prevent the fine particles of soil from getting into and clogging it up. The soil used may consist of two parts good lumpy peat, two parts turfy loam, with the addition of a little moss, and sufficient sand to render the mixture porous. For some weeks after disturbance at the root give little water, to allow the new roots time to enter the fresh soil; afterwards, as growth proceeds, a good supply will be demanded. Stanhopeas are a long way from the top of

the list of first favourites, yet where room can be found for them a few members of the genus should be grown for the sake of their peculiar, wax-like flowers. They should be grown in shallow baskets without any crocks or other hard substances at the bottom, as the scapes usually take a downward course, and oftentimes go straight down through the basket. A small portion of good peat and moss is all that is needed for them to root into, and excepting when in full growth very little moisture is required other than that obtained from the air. Those whose baskets have become rotten, or too small, may be given new ones this month. They do best when suspended from the roof of the Cattleya house. An item of vital importance to the young growths is never to let water lodge in the young unfolded leaves, or the probability is they will damp off.

Diacium bicornutum was long known under the name of Epidendrum bicornutum, and of all the Epidendrums at present under cultivation, it will be generally admitted that none surpass it in beauty, though from a cultural point of view it is far from satisfactory, as it almost holds the record of being the worst grower of the lot. It has cylindrical bulbs, which, strange to say, are hollow, like those of Schomburgkia tibicinis, and on this account will not stand a long period of drought. Having flowered during the last month, a short period of inactivity should ensue prior to new growths appearing. When these appear the plants should have all the old moss picked out and replaced with new. This species thrives best in baskets almost filled with crocks, and just surfaced with moss. The baskets should be suspended in the warmest and lightest structure at command, and during the growing season deluged with water daily. As soon, however, as the growths are completed, a gradual lessening of the supply should follow, though, as stated above, they should not be kept dry for long together, or the bulbs will shrivel beyond recovery.

## ODONTOGLOSSUMS FROM KELVINSIDE.

A SERIES of very beautiful Odontoglossums has been sent from the collection of Hugh Steven, Esq., Westmount, Kelvinside, Glasgow, by Mr. D. Wilson, affording evidence of excellent culture. Single flowers of over a dozen forms of O. crispum are included, showing the wide range of variation met with in this beautiful species. Several forms have quite unspotted sepals and petals, ranging from pure white to light rose, some of them only flushed with very light rose in the sepals, but nearly all having a few small or larger spots in the lip. Two or three others have a few or several spots or blotches on the sepals, but the petals unspotted, while the

least common are those in which the spots also extend to the petals. These spotted forms also range from white to light rose in the ground colour. Several forms have very broad segments, some measuring over 1¼ inches across the petals, and over 4 inches from tip to tip of the same. A very fine O. luteopurpureum var. hystrix is enclosed, characterised by the large nearly white limb of the lip. Other interesting forms are O. × cristatellum, O. × Andersonianum, and O. sceptrum.

We have heard it remarked that Odontoglossums do not succeed everywhere, at all events not equally well, and it would be interesting if our readers could throw further light on this question, especially those who have had them in their care in different localities. If the difference is a real one, it should be possible to suggest a cause. At all events, they succeed near Glasgow, for better examples of good culture than some of those now before us it would be difficult to find.

As regards culture, Mr. Wilson remarks :—" I adopt the usual treatment, except that I never feed them, either at the roots or in the atmosphere. It is usually the first question asked me, What do I feed them with ? I keep the air in the houses as pure and sweet as possible. It may be that the air of Glasgow has something to do with it, though personally I would rather be twenty miles away, and have no doubt that they would be grown with equal success. Certainly we have splendid water, but there is nothing to prevent anyone from having good soft water, in any locality, if only they will build cisterns for storing rain water. I may add that there are over 150 spikes of Odontoglossum in bloom here at present, some plants bearing from three to seven spikes."

## STENOGLOTTIS LONGIFOLIA ALBA.

The appearance of a pure white variety of Stenoglottis longifolia is a very interesting event, as the list of easily-grown greenhouse Orchids is not an extensive one, and the typical form has proved to be one of the best of them. The new variety, which was exhibited at the Temple Show, both by Messrs. F. Sander & Co. and Sir Trevor Lawrence, only differs in the colour of the flowers, and contrasts effectively with the purple of the older form, whose history was given at page 240 of our last volume. A very fine clump of the typical form was also exhibited at the Temple Show, by Messrs. Sander, bearing forty spikes of flower, and there is every reason to believe that the new variety has an equally good constitution. It presumably appeared in an importation of the typical form.

## PHALÆNOPSIS CULTURE AT NEW YORK.

We have much pleasure in presenting our readers with an illustration of a fine group of Phalænopsis Schilleriana in the collection of Mr. W. B. Dinsmore, Staatsburgh-on-Hudson, New York, U.S.A., reproduced from a photograph which has been kindly sent by Mr. James Goodier, Mr. Dinsmore's Orchid grower, together with the following account of their treatment :—

The house in which these plants are grown is a span roof, running north to south. The centre bed is used for ordinary stove plants, and over

Fig. 9.—Group of phalænopsis schilleriana.

these are hung the Phalænopses in baskets. Every year, about the month of May, or as soon as the plants commence to make a leaf, I take all the old moss away from them, and wash the crocks and roots of every bit of dirt with a good force of water from the hose-pipe, then work in a few pieces of crocks and charcoal, finishing up with a layer of good sphagnum moss. On all bright days I sprinkle the moss and baskets, but never give too much water. Should any of the moss show signs of decay in the fall I renew it,

but do not wash them out as in the spring. As the winter comes along every other day seems often enough to sprinkle the plants, until the flower-spikes begin to show their buds, then they take much more water. After the flower-spikes are cut water is withheld again for a few weeks, only enough being given to keep the leaves plump.

Plenty of heat, moisture, and shade, are the main things I rely on; as near 70° at night as can be got seems to do all right, with a rise to 80° with fire heat during the day. The house is thoroughly damped down twice a day, taking care to throw lots of water behind the pipes (hot water). In summer it does not need so much, for the fires are let out for about four months; a good damping in the afternoon seems enough. There are no side or bottom ventilators in this house, so all the airing is done from the top ventilators, these I never open till the glass stands at 90°, and then only open them a little.

I never use manure or feeding of any kind, and under this treatment the plants make three leaves every year, and two or three spikes. Some of the spikes are 3 to 4 feet long, and bear from 50 to 80 flowers. The house is heavily shaded; in the spring a good coat of whitening mixed with turpentine, and a little oil to make it stick to the glass, is put on, then about the month of May, lath shading is put on this, laid close to the glass. This lath shading stays on all summer till October, then it is taken down, but the whitening is never washed off, but during the winter the storms take it off by degrees, so that it needs renewing early in March. I find the more heat Phalænopses get the better they do, for last year we had a very warm spell in this country, when for about ten days together the glass was over 100° in the shade, and then you could almost see the leaves grow. This, I think, had a lot to do with the fine spikes we got this year. When the house is shut up in the afternoon in summer the glass runs up to 120°, and in the morning the plants are wet with dew. I may say that the plants are never troubled with thrip or any other insect, and the leaves get a sponge over but once a year.

JAMES GOODIER.

Three photographs were sent—the one here reproduced; a second of the same plants taken two years ago, showing a decided improvement at the present time; and a third representing a single remarkable specimen, which, owing to the nature of the background, is not so suitable for reproduction. It is a plant with a double crown, and Mr. Emerson, Mr. Dinsmore's gardener, states that it was purchased twelve years ago from Messrs. Hugh Low & Co., of Upper Clapton, and that some years later it broke away from the base, and so formed a double plant. Mr. Goodier, who has had charge of it for $3\frac{1}{2}$ years, encloses the following note:—

"It is growing in a 12-inch basket, and at the time this photograph was taken (February 23rd) had 150 fully-expanded flowers and 15 leaves, each from 15 to 18 inches long. The spikes are about 4 feet in length, and the variety is a very good one, as will be seen by the flowers enclosed. In looking at the picture a young plant can be seen on the flower spike, and it seems quite natural for it to throw up young ones in this manner, for within the last two years I have taken four such plants from it, besides the two crops of flower. Last year there were 98 blooms, and the year before 110, so altogether it is quite a profitable plant. The young ones come in the form of a flower spike till they get 15 inches long, then they stop growing, and the young plant forms. When it is large enough I put a little moss around the base, keeping it always moist, and very soon it throws out roots. Then I cut it off and put it in a hanging pan, and in a short time it is ready for a 5-inch basket."

It is certainly an excellent example of good culture. The group shown contains about fifty spikes, and speaks for itself as to the success of the cultural methods adopted.

## CURIOUS CROSSES.

Mr. Eichel, in his interesting notes last month on the "Raising of Orchid Seedlings" (pp. 138—140), mentions three extraordinary crosses between Lælia and Cypripedium, which seem to have been successful, inasmuch as in one instance plants were said to have been raised, and in the other two "apparently good seed" was obtained. Perhaps Mr. Eichel will be good enough to give us a few more details of these three curious crosses, which could not fail to be of interest both to the student and to the breeder.

Early in the present year, for the sake of experiment, I determined to try a few of these outlandish crosses, and I have been surprised to find that out of eight crosses made between different—in several cases very distinct—genera, only one failed to set, and that was the reverse cross of one which appears to have "taken" well. The following is a list of the crosses made, with the dates, and the results up to the present:—

Lycaste Skinneri ♀ × Lælia anceps Sanderiana ♂. Crossed 15th February, 1897; a healthy-looking pod, 5 inches in girth.

Lælia anceps Sanderiana ♀ × Lycaste Skinneri ♂. Crossed 15th February, 1897; did not take (the reverse cross of the preceding).

Lycaste Skinneri ♀ × Lælia (Brassavola) glauca ♂. Crossed 16th March, 1897; a good-looking pod, 4 inches in girth.

Ada aurantiaca ♀ × Lælia (Brassavola) glauca ♂. Crossed 16th March, 1897; pod swelled slightly, but gradually faded,

Cypripedium Calceolus ♀ × Phragmipedium (Selenipedium) × Sedenii candidulum ♂. Crossed 18th March, 1897; a well-formed pod over 1 inch in girth.

Paphiopedium (Cypripedium) Exul ♀ × Cypripedium Calceolus ♂. Crossed 16th April, 1897: a fine-looking pod, over 1¼ inches in girth.

Angræcum sesquipedale ♀ × Lælia purpurata ♂. Crossed 9th May, 1897; pod forming rapidly, already 3½ inches in girth.

Cattleya Mossiæ ♀ × Angræcum sesquipedale ♂. Crossed 9th May, 1897; pod forming, now 1¼ inch in girth.

Perhaps some may think me rather premature in putting these crosses on record, considering the short time that has elapsed since their pollination, and especially as it yet remains to be seen whether these healthy-looking pods will produce good seed. On the other hand, the above list may possibly encourage some to attempt other curious crosses, hitherto hardly dreamed of in the philosophy of Orchid breeding—crosses which might lead to results at which the Orchid world would wonder, and which would, at the same time, throw a little light on the dark mysteries of evolution.

CHARLES CHAMBERLAIN HURST.

Burbage Nurseries,
Near Hinckley.

[We shall await the further development of this experiment with interest, even if the results are nil, so far as seedlings are concerned. We believe that many experiments have been made of which no details have been recorded—indeed, this seems to be the general rule unless seedlings are produced and reach the flowering stage, a circumstance which is of comparatively rare occurrence in the case of crosses between distinct genera. Seedlings of reputed crosses between Sobralia and Cattleya, and between Epidendrum and Dendrobium, have been recorded in our pages, and we should be glad to hear of their progress, as well as of the existence of other curious crosses. Records of a series of systematically-conducted experiments of this kind could not fail to be interesting, and might lead to some important results.—ED.]

## DISA LUGENS AND D. HARVEIANA.

THESE two rare and pretty South African Disas are flowering at the Royal Botanic Garden, Glasnevin, under the care of Mr. F. W. Moore. The first belongs to the group of blue Disas—at one time referred to a distinct genus, under the name of Herschelia—which, in spite of repeated efforts, have not been much of a success under cultivation. The dorsal sepal of D. lugens, is hooded, metallic greenish purple, or sometimes lilac, with

darker nerves, the petals purple, forming a decided contrast, and the lip, which is completely broken up into a mass of hair-like segments, light green. It is found on heathy downs on Table Mountain, and for some distance further east, and Mr. Bolus remarks that it is by far the tallest and strongest of the group, and the racemes bear from four to twelve flowers. It is a very quaint and interesting botanical Orchid. The most beautiful species of this group is D. graminifolia, which does not appear to have been introduced to Europe—or at all events to have been successfully cultivated. Bolus remarks that it is one of the commonest species on Table Mountain, has a rather long flowering period, and attracts universal observation by its beauty and brilliancy; so much so that Lindley, in dedicating it to the great astronomer, Herschel (who was also a great Orchid-lover and cultivator), felicitously speaks of it as "species hœc pulcherrima *colore cæli australis* intense cœruleo superbiens."

D. Harveiana is a very different species, the dorsal sepal bearing a long slender spur over two inches long. The flowers are borne in a loose raceme of three to seven each, the colour being a delicate lilac or French grey, with dark purple lines on the petals and base of the dorsal sepal. It is a native of Table Mountain, being found on rocky clefts and ridges at 1,500 to 2,500 feet altitude, though scarcely abundant. Many of the Cape Disas are very interesting and pretty little plants, and several have flowered in cultivation during recent years.

R. A. R.

## MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

THE meetings of this Society will be held on alternate Thursdays, at the Coal Exchange, Market Place, Manchester. The Committee will meet at Twelve o'clock, prompt, for the purpose of adjudicating upon Orchids submitted for award. Doors open at 10 a.m. Only members will be allowed to exhibit except by special consent of the Committee.

The dates of the three next meetings are June 3rd and 17th, and July 1st.

The plants will be open to the inspection of members of the Society and the public also, from 1 o'clock to 4 o'clock. A charge of 6d. each for admission will be made to all who are not members.

The first Meeting of the Committee for the purpose of adjudicating upon Orchids submitted was held at the Headquarters of the Society, The Coal Exchange, Market Place, Manchester, on May 20th, when a fine show of some of the rare and choice specimens under cultivation was sent up.

Present: W. Thompson, Esq., in the chair, and Messrs. A. Warburton, D. B. Rappart, H. Greenwood, J. Backhouse, P. Weathers, W. Stevens, W. Bolton, J. Anderson, J. Cowan, G. Shorland Ball (Hon. Tres.), W. A. Gent (Hon. Sec.)

Richard Ashworth, Esq., The Ashlands, Newchurch (gr. Mr. Pidsley), sent a plant under the name of Cattleya Gaskelliana, but which the Committee designated as a form of C. Mossiæ Wageneri (Award of Merit).

Ferd. Spinner, Esq., Hopefield, Didsbury, showed a form of Odontoglossum crispum.

J. Leemann, Esq., West Bank House, Heaton Mersey (gr. Mr. Edge), sent a fine flower of Cattleya Schilleriana.

Duncan Gilmour, Esq., Highbury, Sheffield (gr. Mr. Day), sent two forms of Cattleya Mendelii.

G. Shorland Ball, Esq., Ashford, Alderley Edge (gr. Mr. Hay), showed Cattleya Skinneri, C. Skinneri alba (Award of Merit), Lycaste Skinneri alba bearing three grand flowers (First Class Certificate), and Cypripedium callosum Sanderæ (First Class Certificate).

James Davidson, Esq., Summerville, Dumfries, sent a fine cut spike of Cattleya Mossiæ.

G. W. Law-Schofield, Esq., New-Hall-Hey, Rawtenstall, showed Cattleya Skinneri oculata (Award of Merit).

A. Heine, Esq., Birchfield, Rusholme (gr. Mr. Cragg), sent Odontoglossum crispum and O. × Andersonianum.

Thos. Roy, Esq., Craigelowan, Perth (gr. Mr. Nicoll), sent a varied collection of cut blooms.

Wm. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), showed some of his very fine things, including Cypripedium Rothschildianum giganteum, bearing five magnificent flowers (First Class Certificate), Cattleya intermedia alba (First Class Certificate), Odontoglossum sceptrum aureum (First Class Certificate), O. hystrix magnificum, O. × excellens Thompsonianum, of absolutely perfect form and coloring (First Class Certificate), and O. crispum Annie, an unique plant (First Class Certificate).

E. J. Sidebotham, Esq., Erlesdene, Bowdon (gr. Mr. Shiner), exhibited two remarkably well-flowered plants of Dendrobium Jamesianum.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Lofthouse), staged a fine group of some of his choice specimens, amongst which were splendid varieties of Lælia purpurata, from light to dark, a nice assortment of Cattleya Mossiæ, Oncidium Marshallianum, and a magnificent specimen plant of Brassia verrucosa, literally covered with blooms of large size.

Messrs. John Cowan & Co., Garston, showed a fine Laelia purpurata,

and also displayed a varied group, consisting chiefly of varieties of the same species, which received a Vote of Thanks.

James Anderson, Esq., Rusholme, showed a white Odontoglossum crispum.

W. Bolton, Esq., Wilderspool, sent cut blooms of Cattleya Mendelii of fine quality, Odontoglossums, Lælia pumila, &c.

## ARE VARIETIES CONSTANT?

With reference to the query on p. 136, Are varieties constant? my reply, shortly put, is yes, except Odontoglossum Pescatorei, which has played some odd tricks by losing its spots entirely one year and regaining them when it was strong, as before. I have scores of dried blooms, and they go to show that as the plant gets to its zenith the spots increase. When it gets weaker, from any cause, the spots are not so good as before, though quite enough to distinguish the variety, as far as I have ever seen.

I have one O. crispum, that only bore a single bloom in 1896, a fine round one, absolutely spotless, except the lip. I kept it, and 1897 proved it a finely-spotted form in all the six blooms it had.

De Barri Crawshay.

Rosefield, Sevenoaks.

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

The last meeting before the Temple Show is usually a small one, but on May 11th the display at the Drill Hall, James' Street, Westminster, was fully up to the average, six Medals, four Awards of Merit, and two Botanical Certificates being given.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), exhibited a very fine group, to which a Silver Flora Medal was given. It consisted largely of showy Cattleyas, some forms of C. Mendelii, and C. Mossiæ being very fine, with the curious little Oncidium unicorne, Bulbophyllum saurocephalum with three spikes, and other interesting things. A Botanical Certificate was given to the pretty little Cirrhopetalum elegantulum.

Walter C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), also received a Silver Flora Medal for a very fine group, including Lælia purpurata, L. grandis, and L. Boothiana, good forms of Cattleya Mendelii, C. Mossiæ, C. Schrœderæ, C. granulosa, C. intermedia, some good Odontoglossum crispum, and others, also fine forms of Oncidium Marshallianum, O. concolor, O. varicosum Rogersii, &c.

Mrs. Briggs Bury, Bank House, Accrington, sent a trilabiate form of Dendrobium Wardianum, Odontoglossum × Andersonianum, and Cypripedium × bellatulo-vexillarium, a handsome hybrid with white ground tinged with rose, and densely spotted with purple, an Award of Merit being given to the latter.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howes), received an Award of Merit for Lælio-cattleya × Hippolyta, Dulcote variety, bearing a fine inflorescence of reddish-orange flowers with purple-crimson lips.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), received an Award of Merit for Odontoglossum × Andersonianum Bogaerdianum, a very fine and large form, with yellowish-white flowers heavily blotched with dark red.

R. I. Measures, Esq., Ladymere, Rogate, Sussex (gr. Mr. Wooton), received an Award of Merit for Cypripedium × Chapmanii magnificum (C. bellatulum ♀ × C. Curtisii ♂), a splendid form, with broad white dorsal sepal tinged with green in the centre, and lined with rows of purple dots, broad white petals densely spotted with purple, and a deep purple lip.

Frau Ida Brandt, Brunnenhof. Reisbach, Zurich (gr. Mr. Schlecht), sent the remarkable Houlletia Lansbergii, a fine Vanda lamellata Boxallii, and the very rare Oncidium Warneri, with bright yellow lip and purple-stained sepals and petals, the latter receiving a Botanical Certificate.

J. Foster Alcock, Esq., Northchurch, Herts, showed Cyrtopodium virescens and a fine Cattleya Schilleriana.

E. Bostock, Esq., Tixdale Lodge, Staffordshire, sent several Cattleya Schrœderæ, and a series of ten forms of Lælia purpurata.

The Marquis of Camden, Bayham Abbey, Kent (gr. Mr. Methven), sent a fine Cattieya Mendelii with seven flowers on one spike.

Malcolm C. Cooke, Esq., Kingston Hill (gr. Mr. Buckell), showed a fine specimen of Masdevallia coccinea Harryana.

H. J. Harris, Esq., Bowden Hill House, Chippenham (gr. Mr. Penton), sent Odontoglossum Pescatorei.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), exhibited Lælio-cattleya × Sir William Ingram, and a variety of Cattleya × Ballantiniana called Rajah.

Mr. J. Mitchell, Bexley Heath, exhibited a large-flowered form of Cattleya intermedia.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), sent a very fine form of Lælia purpurata.

R. Brooman White, Esq., Arddarroch, Garelochead, sent Odontoglossum × Andersonianum pulcherrimum, O. × A. candidum, and other handsome Odontoglossums.

Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. White) showed a handsome form of Lælia purpurata, with white flowers, the front lobe of the lip being bright claret coloured, changing to lilac towards the margin.

Messrs. James Veitch and Sons, Chelsea, staged a splendid group of well-grown and flowered specimens, to which a Silver-gilt Flora Medal was awarded. It included the pretty Cattleya × Philo (C. Mossiæ ♀ × C. iricolor ♂), Lælio-cattleya × Ascania, the handsome L.-c. × Hippolyta, and several forms of L-c. × Latona, some having the sepals and petals lemon yellow, slightly tinged with reddish, and others much darker, the front lobe in each case being deep purple. It also contained some good Odontoglossums, Cypripediums, Masdevallias, Cattleyas, Cœlogyne pandurata, Disa × Veitchii, Oncidium sarcodes, O. Marshallianum, O. concolor, Dendrobium Phalænopsis, and other good things.

Messrs. Hugh Low and Co., Upper Clapton, received a Silver Flora Medal for a very fine group, containing some good forms of Cattleya Mendelii and Mossiæ, C. Schrœderæ, C. Schilleriana, a splendid C. Gaskelliana alba, some splendid forms of Lælia purpurata, some good pans of Dendrobium Bensoniæ, Cœlogyne pandurata, a very fine form of Odontoglossum × Andersonianum, and other Odontoglossums, Cypripediums, Dendrobiums, &c.

Messrs. B. S. Williams and Son, Upper Holloway, received a Silver Banksian Medal for a fine group, including some good forms of Cattleya Mendelii and Schrœderæ, C. Skinneri, some fine Lælia purpurata, Miltonia spectabilis, Ada aurantiaca, Angræcum Leonis, Oncidium concolor, some good Calanthe Regnieri Sanderiana, Dendrobium Devonianum and D. thyrsiflorum, D. Dalhousieanum luteum, Cypripedium Mastersianum, Chamberlainianum, and others.

Messrs. Cripps and Sons, Tunbridge Wells, received a Silver Banksian Medal for a small group of showy things, in which two splendidly-flowered specimens of Selenipedium caudatum were particularly noteworthy, also S.c. Wallisii and Cypripedium philippinense.

## THE TEMPLE SHOW.

THE tenth great Annual Flower Show of the Royal Horticultural Society was held in the Inner Temple Gardens on May 26th, 27th, and 28th, and brought together a magnificent display of Orchids, in which most of the showy Orchids which flower at this season were represented in force, the groups contributed by the President, Sir Trevor Lawrence, and Baron Sir Henry Schröder being, as usual, superb. The arrangement was much the same as on former occasions, and in the grouping of the plants themselves

there is little of novelty to record. Messrs. F. Sander & Co. and Messrs. Linden, however, arranged their plants on irregular banks of Hypnum moss, a novel feature, though the dressing was too dwarf and compact to form an improvement on the usual maidenhair fern. The crowding of exhibits was hardly as noticeable as on some former occasions, though some of the groups would have looked better with a little more space, or, as this in some cases had to be curtailed, with a few of the commoner things left out. One fault of previous years was, if anything, worse than usual, for in a few cases it was almost impossible to ascertain the limits of the different groups, and this was especially noticeable where a few plants from several different exhibitors were huddled together.

There is naturally a certain amount of sameness in these shows, but the present occasion was marked by the fine display of Odontoglossum crispum and the paucity of Cattleya Mendelii. C. Mossiæ and Lælia purpurata were, as usual, abundant in most of the groups, and a few other well-known things were pretty generally represented. In the following report we have aimed at giving the more characteristic features of the different groups, and the rarer plants exhibited.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), staged a magnificent group, remarkable alike for quality and excellent culture, which was recognised by the award of a Gold Medal. It contained a fine series of Odontoglossum crispum varieties, one of the most striking being O. c. Sanderianum, characterised by the red-purple colour of the segments being almost suffused into one great blotch, leaving the margins white. Other Odontoglossums were well represented, and included the beautiful yellow O. luteopurpureum Vuylstekeanum, O. marginellum, O. ramosissimum, O. polyxanthum, O. × Wilckeanum, O. gloriosum, &c. The one which attracted most attention was the striking O. × Coradinei mirabile, remarkable for its great substance, broad segments with nearly white ground, and large light chestnut blotches. Cattleya Warscewiczii Sanderiana bore massive richly-coloured flowers, and the forms of C. Mossiæ were very good. Lælio-cattleya × Digbyano-Mossiæ and L.-c. × Hippolyta were as charming as ever; also Cypripedium callosum Sanderæ. We also noted C. Lawrenceanum Hyeanum, C. bellatulum, Sobralia macrantha Kienastiana, Cochlioda Nœtzliana, Dendrobium Loddigesii and D. Bensonæ, well flowered, D. Brymerianum, several forms of the pretty little Epidendrum × elegantulum, E. prismatocarpum, the remarkable Bulbophyllum barbigerum wtth two racemes, the hairy lips fluttering with every breeze, and many others. A very fine specimen of Cœlogyne Dayana with twenty-two long drooping spikes received a Cultural Commendation and an Award of Merit.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged

another very large and beautiful group, not for competition, or it would have received a similar award to the preceding. It contained excellent examples of most of the showy things which flower at this season, with a varied addition of rare and botanical species, which are equally interesting, if less showy, and attract more attention than some of the more familiar ones. One of the most striking things in the group was Zygopetalum × Perrenondii, shown in superb condition. Bifrenaria Harrisoniæ was represented by a good well-flowered plant. Thunia Bensoni and T. Marshalliana, Vanda teres, and V. Denisoniana were noteworthy; also a fine Cypripedium Mastersianum, C. × Lebaudyanum (Haynaldianum ♀ × philippinense ♂), C. Druryi, strong well-flowered plants of C. niveum, the richly-coloured Odontoglossum × excellens Prince of Orange, Cochlioda Nœtzliana, and Dendrobium signatum. Passing over the common showy species, we noted a fine clump of the Birds-nest Orchid, Neottia Nidus-avis, from the Burford Woods, Orchis latifolia, the very pretty Stenoglottis longifolia and its variety alba, Trichocentrum calcaratum very well flowered, as also were good plants of Masdevallia peristeria, M. hieroglyphica and M. coriacea, Octomeria diaphana, Colax jugosus, the graceful and pretty Epidendrum Mooreanum, and E. arachnoglossum with handsome heads of flowers. The pretty little E. Endresii with its descendants E. × Endresio-Wallisii and E. × elegantulum were very interesting; also E. Jurgensenii, E. glumaceum, Vanda cœrulescens, Maxillaria Houtteana, Eria ornata, Disa racemosa, Oncidium nubigenum, the orange-brown O. Hrubyanum, **Aeranthes dentiens, and many others.**

Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. Young) received a Silver-gilt Flora Medal for a very fine group, containing Cattleya Skinneri alba with three racemes, a good C. Mendelii, C. superba, C. Mossiæ Beatrice, and other good forms of C. Mossiæ, Lælia purpurata Arthur Wigan, prettily zoned with light purple round the mouth of the lip, a very dark L. tenebrosa, Dendrobium Maccarthiæ and D. Parishii, Vanda Denisoniana, Miltonia Rœzlii, and some fine Miltonia vexillaria, and Odontoglossum crispum, a good O. × Wilckeanum, O. × Andersonianum, and others, the handsome Cypripedium × Gertrude Hollington, C. × Godefroyæ leucochilum, much more like C. niveum than many other forms, C. philippinense, the pretty little Cœlogyne Schilleriana, a fine Cymbidium **Lowianum, the singular little Eria extinctoria, &c.**

Earl Percy, Syon House, Brentford (gr. Mr. Wyethes) also received a Silver-gilt Flora Medal "for Orchids and Fruit." His group of the former contained good examples of most of the showy kinds now in flower, those specially noted being three good specimens of Oncidium sphacelatum, also O. concolor and O. Marshallianum, Dendrobium chrysotoxum, D. Bensonæ, and D. Phalænopsis, Cymbidium Lowianum, Ada aurantiaca, Brassia

verrucosa, Odontoglossum crispum, O. cordatum and O. gloriosum, Cypripedium barbatum, Cattleya Mossiæ, Lælia tenebrosa and L. purpurata.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford) received a Silver Flora Medal for a small but excellent group, including fine examples of Cypripedium callosum Sanderæ and C. × Gowerianum, Odontoglossums crispum, Pescatorei, citrosmum and Cervantesii, Miltonia vexillaria, Dendrobium Bensonæ, Lælia purpurata, Cattleya Skinneri alba, several good C. Mossiæ, and an immense-flowered C. Schilleriana called Hardy's variety, to which a First-class Certificate was given.

Ludwig Mond, Esq., The Poplars, Avenue Road, Regent's Park (gr. Mr. Clark) also received a Silver Flora Medal for a small but very good group, in which we noted Oncidium sarcodes, Cœlogyne Dayana, Epidendrum vitellinum, Lælia purpurata, Cattleya Mossiæ, and Odontoglossums hastilabium, cirrhosum, citrosmum, cordatum, and crispum.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Barrell) received a Silver-gilt Banksian Medal for a fine group, consisting chiefly of Odontoglossums, and including a fine series of well-grown O. crispum, with O. cordatum, citrosmum, hastilabium, Hallii, sceptrum, &c. We also noted a good Oncidium Marshallianum, seven plants of the handsome Cochlioda Nœtzliana, and some good Miltonia vexillaria.

W. A. Gillett, Esq., Fair-oak Lodge, Bishopstoke, Hants (gr. Mr. Carr) also received a Silver-gilt Banksian Medal for a fine and well-arranged group, including some good Miltonia vexillaria, a pretty M. Phalænopsis with ten flowers, good forms of Lælia purpurata, Cattleya Mossiæ, and Odontoglossum crispum, O. cordatum, and var. aureum, a good plant of O. hastilabium, the handsome Cochlioda Nœtzliana, a good plant of Zygopetalum crinitum with two spikes, Cypripedium niveum, and various others.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), contributed a small but very select group, to which a Silver-gilt Banksian Medal was given, while three of the plants were selected for special awards. It included the handsome Odontoglossum sceptrum aureum, with a spike of eleven very deep yellow flowers, spotted with light brown (First-class Certificate), O. × excellens Thompsonianum with very deep yellow ground (Award of Merit), O. crispum Annie, a light rose prettily spotted variety (Award of Merit) and four other superb forms of O. crispum, the handsome O. × Wilckeanum elegans with a spike of sixteen flowers, and another fine form of this hybrid with as many as twenty, O. × Coradinei with very broad segments, and several plants of the brilliant Cochlioda Nœtzliana, one carrying six spikes.

Malcolm C. Cooke, Esq., Kingston Hill (gr. Mr. Buckell) received a Silver Banksian Medal for a very good group, including Cymbidium Lowianum, Miltonia vexillaria, Lælia purpurata, Cattleyas Mossiæ,

Skinneri and dolosa, Odontoglossums crispum, Pescatorei, triumphans, cirrhosum and × Andersonianum, Epidendrum radicans and vitellinum, Cypripediums bellatulum and Chamberlainianum, Maxillaria Sanderiana, Masdevallia Harryana, and others.

Major Joicey, Sunningdale Park (gr. Mr. Thorne) also received a Silver Banksian Medal for a small group of finely-grown specimens, including Dendrobium formosum, Epidendrum vitellinum, Selenipedium caudatum, a fine specimen of Miltonia vexillaria, and two fine plants of Anguloa Clowesii, each with about twenty flowers, in which we noticed three twin-flowered spikes.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook) received a First-class Certificate for the remarkable Lælia purpurata Ashworthiana, in which the petals are about three times as broad as usual, and coloured much like the lip, except for the absence of the yellow disc. He also sent a very curious flower of Cattleya intermedia composed of only two sepals and two lips.

G. W. Law-Schofield, Esq., New-Hall-Hey, Rawtenstall, Manchester (gr. Mr. Schell), received a First-class Certificate for Lælio-cattleya × tyntesfieldense, a plant of unrecorded parentage, though its characters leave little doubt of its descent from Lælia purpurata and Cattleya Dowiana.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman) exhibited Cypripedium × Chapmanii (Curtisii ♀ × bellatulum ♂) and C. × C. magnificum (derived from the reverse cross), the latter receiving a First-class Certificate. He also sent a seedling from C. barbatum superbum × C. Godefroyæ, and thus the reverse cross of C. × J. Gurney Fowler, figured at page 360 of our second volume.

R. Brooman White, Esq., Arddarroch, Garelochead, also received a First-class Certificate for Odontoglossum crispum Starlight, a magnificent variety with broad, light rose-coloured segments, each densely dotted with red brown, and the petals much fimbriated.

R. Ashworth, Esq., Ashlands, Newchurch, Manchester (gr. Mr. Pidsley), received an Award of Merit for a form of Odontoglossum × excellens, called Richard Ashworth, with branching spike and yellowish white segments, the latter character being exceptional.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. Johnson), received an Award of Merit for Cypripedium × conco-bellatulum, a fine thing, intermediate between the two parents.

A. Warburton, Esq., Vine House, Haslingden, also received an Award of Merit for Lælia purpurata fastuosa, a broad richly-coloured variety.

His Grace the Duke of Sutherland, Trentham (gr. Mr. Blair), sent a magnificent white form of Odontoglossum crispum, bearing a raceme of thirteen flowers, the largest measuring $4\frac{1}{2}$ inches across.

M. Jules Hye-Leysen, Coupure, Ghent, sent a fine form of Miltonia × Bleuana, M. vexillaria radiata, Odontoglossum sceptrum, and the rare O. nevadense, a fine O. × excellens, the handsome O. × Wilckeanum albens with a single flower, a finely spotted O. cripum, and others.

C. Ingram, Esq., Elstead House, Godalming (gr., Mr. Bond), sent Lælio-cattleya × Electra (Lælia purpurata × Cattleya Percivaliana).

Messrs. Charlesworth and Co., Heaton, Bradford, staged a superb group, to which a Silver Cup was awarded. It contained a magnificent form of Lælio-Cattleya × Canhamiana called Lady Wigan (First-class Certificate), Cypripedium bellatulum album, C. × Leysenianum, and others, the beautifully-fringed Lælia Digbyana, L. × Latona, the pretty Sophro-lælia × Marriottiana, Cattleya Dowiana aurea with three flowers, curiously out of season, a fine C. Mossiæ Reineckiana, the rare Oncidium nigratum, a fine pure white Odontoglossum Pescatorei, some good O. crispum, Spathoglottis Kimballiana, Epidendrum vitellinum, and good forms of most of the showy species which flower at this season.

Messrs. Hugh Low and Co., Upper Clapton, also staged a large and very fine group, and received a Silver Cup "for Orchids and other plants." It contained some vey fine Odontoglossum crispum, one finely-spotted form called Queen Victoria receiving a First-class Certificate, a fine Cypripedium × Gertrude Hollington, C. Rothschildianum, a fine clump of C. bellatulum, Lycaste cruenta, Phalænopsis × intermedia Portei, and the darker variety Brymeriana, Cœlogyne asperata (Botanical Certificate), the rare Vanda pumila, the brilliant crimson Dendrobium sanguineum, some fine D. Bensonœ, Oncidiums Papilio, Kramerianium and macranthum, Cattleya × intricata, Mendelii and Schilleriana, some fine forms of C. Mossiæ and Lælia purpurata, L. × Latona, L. tenebrosa, Selenipedium caudatum Wallisii, Rhynchostylis retusa, &c.

Messrs. Linden, L'Horticulture Internationale, Brussels, also received a Silver Cup for a group of fine forms of Cattleya Mossiæ and Odontoglossum crispum, with O. sceptrum, O. Pescatorei imperiale (Award of Merit), O. cirrhosum, O. × excellens, Cochlioda Nœtzliana, &c. The plants were arranged on a bank of moss.

Mr. J. Cypher, Cheltenham, exhibited a fine well-arranged group, to which a Silver-gilt Flora Medal was given. It included a fine series of forms of Lælia purpurata, a fine Trichopilia coccinea with twelve flowers, Cattleya Warneri, citrina and other fine Cattleyas, Oncidium macranthum and several good O. cucullatum and concolor, Dendrobium nobile with very large flowers, well-bloomed D. Bensonæ and Parishii, excellent Odontoglossums, Thunia alba, Calanthe Textorii, Epidendrum × O'Brienianum and radicans, Selenipedium × grande, Cypripediums exul and bellatulum, Masdevallia × Heathii and Veitchiana, Miltonia vexillaria, &c.

Messrs. W. L. Lewis & Co., Southgate, also received a Silver-gilt Flora Medal for a very fine group, containing the handsome Cypripedium × Gertrude Hollington, C. × Aylingii, some fine forms of Lælia purpurata and Cattleya Mossiæ, C. Mendelii Madonna, a pretty blush-white form (Award of Merit), C. citrina, Brassia verrucosa, Thunia Marshalliana, well-flowered Lycaste Deppei, Oncidiums hastatum, macranthum, and varicosum, Dendrobiums Phalænopsis, Bensonæ, lituiflorum, and clavatum—in short most of the usual showy species except Odontoglossum crispum, which, curiously enough, was unrepresented in the group.

Mr. A. Piret, Argenteuil, France, sent a handsome group of a dozen white forms of Cattleya Mossiæ, ranging from C. M. Reineckiana down to the variety Wageneri, also the fine coloured C. M. grandiflora. A Silver Flora Medal was awarded.

Messrs. B. S. Williams and Son, Upper Holloway, staged a large and varied group, to which a Silver-gilt Banksian Medal was given. Most of the usual showy species were well represented, especially among Cattleyas and Odontoglossums ; we also noted good Anguloa Clowesii, Vandas tricolor and suavis, Ada aurantiaca, Cochlioda Nœtzliana, Aërides Fieldingii, Oncidiums monachicum, concolor and Marshallianum, the pretty Odontoglossum crispum Marianæ, &c. Cypripediums were also better represented than in many other groups.

M. A. A. Peeters, St. Gilles, Brussels, received a Silver Banksian Medal for a small group of choice things, comprising Miltonia vexillaria virginalis, M. v. radiata, Odontoglossum crispum Peetersii (Award of Merit), and another handsomely blotched variety of this species.

Messrs. F. Sander & Co., St. Albans, staged a group of fine things, banked up with moss. It contained a beautiful specimen of Cattleya Mossiæ Reineckeana, from the collection of the late G. Hardy, Esq., with thirteen flowers and buds, C. × Rossii (Leopoldii ♀ × intermedia ♂) Lælio-cattleya × D. S. Brown, a very fine pan of Stenoglottis longifolia with forty spikes, a small plant of the variety alba, two fine specimens of Dendrobium pulchellum (Dalhousieanum), D. Dearei and D. Jamesianum, a specimen Sobralia × Veitchii, Lælia tenebrosa, Odontoglossum cordatum aureum, O. auriculatum, the curious Epidendrum vesicatum, Miltonia Warscewiczii, &c., a fine pan of Macodes Sanderiana (Anæctochilus Sanderianus) received an Award of Merit.

Messrs. James Backhouse and Son, York, had many good Orchids on their arrangement of rockwork, including Odontoglossums hastilabium, polyxanthum, Pescatorei, crispum, Harryanum, × Coradinei, × excellens, and Reichenheimii, Thunia Marshalliana, Dendrobium Phalænopsis, Lælia tenebrosa, some good Cattleyas, Cypripedium Rothschildianum, Exul, and others, Miltonias vexillaria and Roezlii, &c.

Messrs. James Veitch and Sons, Chelsea, exhibited their first hybrid Spathoglottis, derived from S. aurea ♀ and S. Vieillardii ♂, a very pretty thing with light yellow flowers, densely dotted with red-purple on the petals and side lobes of the lip.

Messrs. Thos. Cripps and Son, Tunbridge Wells, exhibited two good, well-flowered plants of Selenipedium caudatum.

## ORCHID PORTRAITS.

AERIDES VANDARUM.—*Journ. Hort.*, May 13, p. 417, fig. 86.

CŒLOGYNE CRISTATA.—*Gard. World*, May 15. pp. 585, 586, with fig.

CYPRIPEDIUM BELLATULUM.—*Gard. Chron.*, May 15, p. 321, fig. 110.

DENDROBIUM × AINSWORTHII.—*Garden*, May 8, p. 338, with fig.

EPIPHRONITIS × VEITCHII.—*Wien. Ill. Gart. Zeit.*, May, pp. 160, 161, fig. 24.

LÆLIO-CATTLEYA × PALLAS.—*Gard. World*, May 1, p. 553, with fig.

LÆLIO-CATTLEYA × DIGBYANA-TRIANÆ.—*Gard. Mag.*, May 1, pp. 254, 255, with fig.

LYCASTE SKINNERI.—*Journ. Hort.*, April 29, pp. 366, 367, fig. 75.

MAXILLARIA HOUTTEANA, Rchb. f.—*Bot. Mag.*, t. 7533.

ODONTOGLOSSUM × WILCKEANUM QUEEN-EMPRESS.—*Gard. Mag.*, May 8, p. 272, with fig.

TRICHOPILIA BREVIS, Rolfe.—*Garden*, May 22, p. 370, t. 1119.

TRICHOPILIA SUAVIS.—*Garden*, May 22, p. 371, with fig.

## CORRESPONDENCE, &c.

W. H. S., Tynemouth. The two forms of Cypripedium Boxallii are fairly typical, one having the dorsal sepal a little darker, the other more broadly bordered with white. Lælia purpurata is quite typical in colour—a large well-formed flower with petals over 1½ inches broad.

T. L. M., Florida. 1, Epidendrum virens; 2, E. ionosmum.

T. A., West Derby. Three good forms of Odontoglossum maculatum; No. 1 has very broad petals, 4 O. × Andersonianum var. Jenningsianum, less common than some of the forms of this hybrid.

A. V. I., Gand. Sobralia leucoxantha. A light form of Dendrobium nobile Cooksoni. Epidendrum campylostalix.

W. S. B., Dorking. Oncidium Trulla.

S. H., Altrincham. Photograph received, with thanks.

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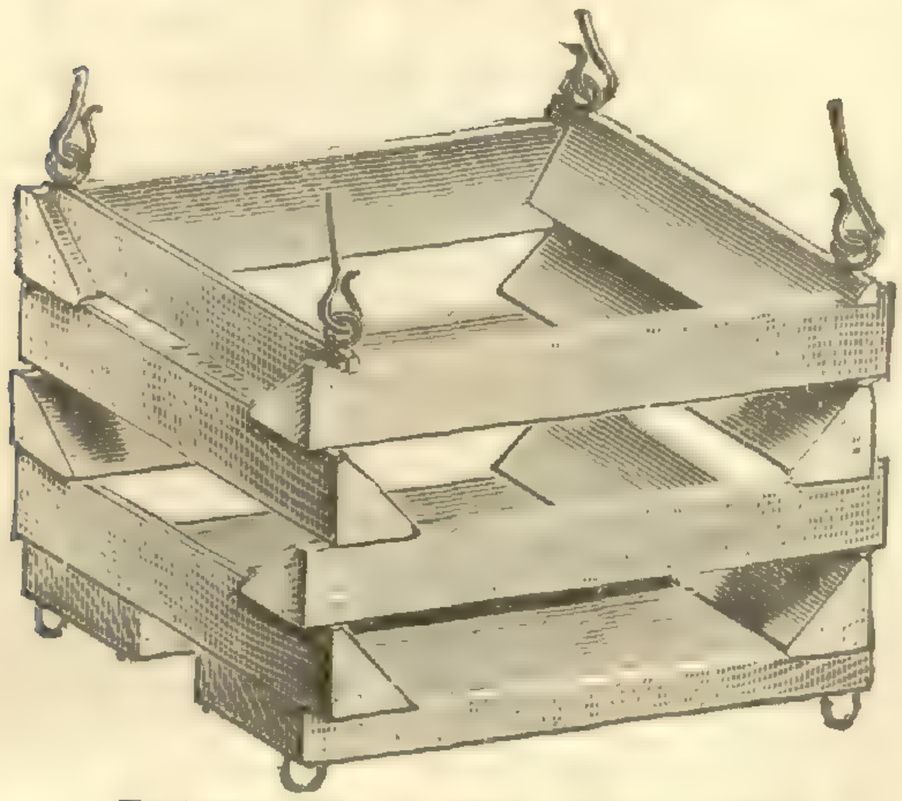

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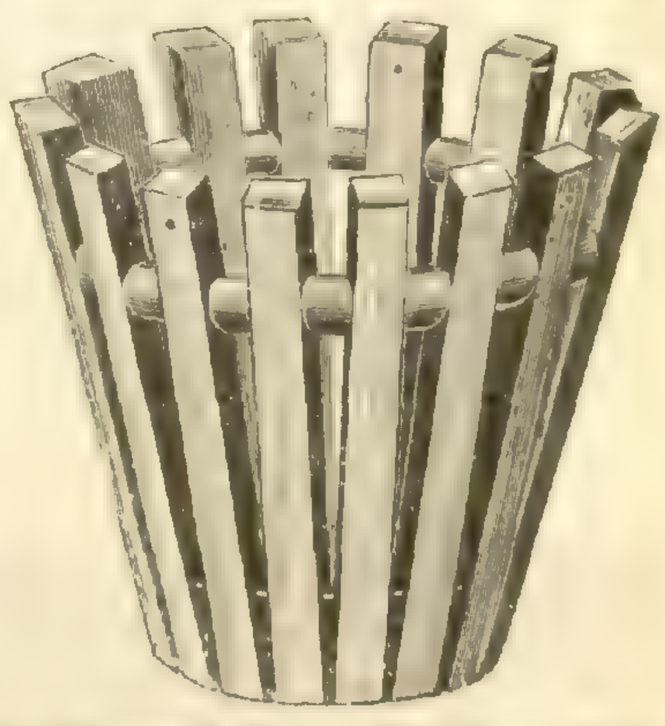

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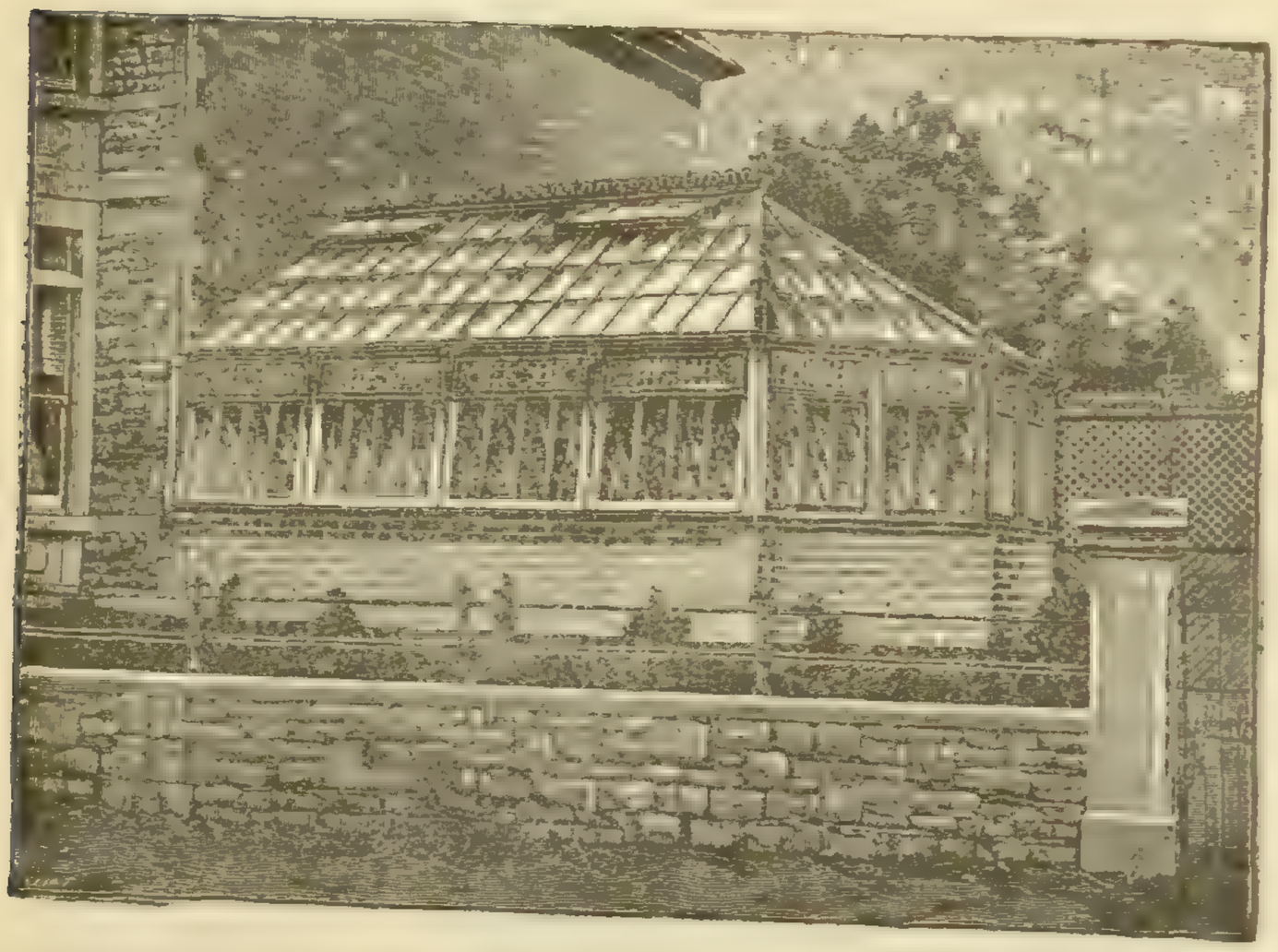

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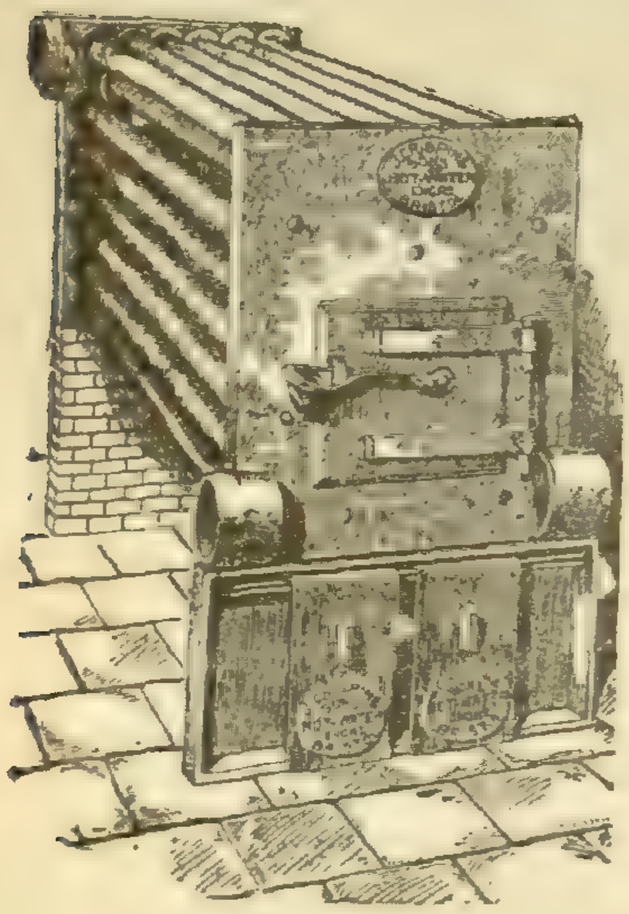

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Vol. V.] JULY, 1897. [No. 55.

# THE ORCHID REVIEW:

## An Illustrated Monthly Journal,

## *DEVOTED TO ORCHIDOLOGY.*

Contents.


| | PAGE | | PAGE |
|---|---|---|---|
| Botanical Orchids at Kew ... ... | 197 | Manchester Royal Botanic Show ... | 217 |
| Bull's Annual Exhibition ... ... | 210 | Notes ... ... ... ... ... | 193 |
| Calendar of Operations for July ... | 212 | Novelties ... ... ... ... | 208 |
| Catasetum barbatum ♂ and ♀ ... | 198 | Bulbophyllum ptiloglossum ... | 208 |
| Correspondence, &c. ... ... ... | 224 | Cattleya Harrisoniana, Comte Visart's variety ... ... ... | 208 |
| Curious crosses ... ... ... | 224 | Cleisostoma Zollingerianum ... | 208 |
| Cypripedium bellatulum, culture of ... | 197 | Dendrobium Papilio ... ... | 208 |
| Cypripedium Curtisii and its allies ... | 199 | Dendrobium Victoria-Reginæ ... | 208 |
| Dendrobium nobile, specimen of (Fig. 10) ... ... ... ... ... | 209 | Orchid Portraits ... ... ... | 224 |
| Dendrobium Phalænopsis, insects injuring ... ... ... ... | 200 | Orchids at Burford ... ... | 206 |
| Destructive collection of Orchids | 204 | Orchids at Messrs. Veitch's ... ... | 202 |
| Dies Orchidianæ ... ... ... | 196 | Orchids at the Royal Horticultural Society ... ... ... ... | 221 |
| Gongora, an albino ... ... ... | 201 | Orchids, destructive collection of ... | 204 |
| Insects injuring Dendrobium Phalænopsis ... ... ... ... | 200 | Trevoria Chloris ... ... | 203 |
| Manchester and North of England Orchid Society ... ... ... | 219 | Vanda × Miss Joaquim ... ... | 211 |
| | | Varieties, are they constant? ... ... | 200 |


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# THE ORCHID REVIEW.

VOL. V.] *JULY*, 1897. [No. 55.

## NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during July, on the 13th and 27th, respectively, when the Orchid Committee will meet at the usual hour, 12 o'clock, noon.

The July meetings of the Manchester and North of England Orchid Society are fixed for the 1st, 15th, and 29th, at the Coal Exchange, Market Place, Manchester. The Orchid Committee meets at noon, and the exhibits are open to inspection from one o'clock until four.

A flower of a very beautiful hybrid from Cattleya × Gaskelliana ♀ and Lælia purpurata ♂ is sent by Messrs. F. Sander & Co., St. Albans. The sepals and petals are light mauve-purple in colour, the latter being two inches broad, and the front of the lip is of a rich amethyst purple, with a broad mauve-purple margin, the back of the lip being of the latter colour with some deep yellow in the throat. It is a variety of the one known as Lælio-cattleya × C. G. Roebling, and the plant which produced it is now flowering for the first time.

A flower of a very pretty form of Cattleya citrina comes from the collection of F. H. Moore, Esq., Royal Infirmary, Liverpool, in which the whole front lobe of the lip is deep orange colour, like the crest. The plant bears two flowers, which are normal in other respects.

A flower of the handsome Cattleya Mossiæ called Rappart's variety, to which a First-class Certificate was awarded at the meeting of the Manchester and North of England Orchid Society on June 3rd, and another by the Manchester Royal Botanical and Horticultural Society on the following day, is sent from the collection of D. B. Rappart, Esq., of Liscard. The flower opened white with the exception of some pretty lilac pencilling on the

front lobe of the lip and the usual buff-yellow disc, but after a week's stay at the latter Show the ground colour has become blush-white. It is a well-shaped and very beautiful variety, and was purchased as an imported plant last year from Messrs. Hugh Low & Co.

Two very fine forms of Cattleya Mossiæ are sent from the establishment of Mr. John Robson, Bowdon Nurseries, Altrincham. One has light rose-coloured flowers, with some darker nerves on the front lobe of the lip, and a little yellow on the disc; the other is delicate blush pink, with some pink veining in the centre of the front lobe, a very broad undulate nearly white margin, and a light yellow throat. Both are of excellent shape, the petals $2\frac{3}{4}$ inches broad, and the rest of the flower correspondingly developed. A fine very dark Lælia tenebrosa is also enclosed.

Two very beautiful varieties of Cattleya Mossiæ are sent from the collection of J. Bradshaw, Esq., The Grange, Southgate. The first is in the way of C. M. Mooreana, having the flowers very light blush, with the front lobe of the lip almost suffused with amethyst purple, instead of veined as is generally the case, a narrow pale blush margin, and the usual deep yellow disc, but of rather less extent than usual. The other is almost like a fine C. M. Wageneri, with very pale blush instead of white flowers. They are of excellent shape, and very distinct from the typical form of the species.

A striking and remarkable flower of Lælia tenebrosa is sent from the collection of James Davidson, Esq., Summerville, Dumfries, in which one half of the lip, or rather more, is normal in colour, and the other half copper-coloured, like the sepals and petals; thus it has a very curious Janus-like appearance. The explanation is that one of the petals is completely adnate to the lip, which is thus drawn a little on one side, and the two lateral sepals are confluent in one. One half of the lip appears to be absent, the two colours being very sharply separated, and the only difference in shape is that the lip is narrower in front on the petal-like half —in short, each half has its own characteristic shape as well as colour.

A splendid form of Cattleya Warneri is sent from the collection of W. S. M'Millan, Esq., of Maghull, Liverpool. The flowers are bright rose, the colour extending throughout the pedicels, with the front lobe of the lip deep purple-crimson. The flowers are very large, as well as deep in colour, the petals measuring $4\frac{1}{4}$ inches long by $2\frac{3}{4}$ inches broad, the other parts being proportionately developed. The raceme has four flowers. It was purchased from Messrs. John Cowan & Co. Good flowers of C. Warscewiczii are also enclosed from a newly-imported plant.

An example of Oncidium crispum with two flowers fused together comes from the collection of John W. Arkle, Esq., West Derby, Liverpool. The two lips are distinct, and diverge laterally, but the columns are confluent, yet bearing two perfect anthers, with pollinia, at the apex. The sepals and petals are somewhat displaced, and seven in number. The other twenty flowers on the spike are normal.

The last number of the *Orchid Album* completes the eleventh volume, and many of our readers will regret to learn that its issue brings the work to a close. It was commenced in 1882 by Mr. B. S. Williams and Mr. Robert Warner, with the help of Mr. Thomas Moore, and afterwards of Mr. W. H. Gower, none of whom lived to see its completion.

Two good forms of Cattleya Mendelii are sent from the collection of John Falconer, Esq., of Lasswade, Midlothian. The first is a beautiful white flower, with the front lobe of the lip rich purple-crimson, and much undulated, and the usual yellow blotches on either side of the disc. The second is very similar, except that the sepals and petals are blush pink instead of white. They are accompanied by a third, which may be considered a typical form.

A very fine form also comes from the collection of F. Hardy, Esq., of Tyntesfield, Ashton-on-Mersey, which has blush pink sepals and petals and a very broad and richly coloured front lobe to the lip.

Two very large and handsome forms of Oncidium Papilio have been received from the collection of D. M. Grimsdale, Esq., of Uxbridge, whether from recently-imported plants is not stated. These superior forms are occasionally met with, especially when the plants are very vigorous, and it is an Orchid which does not succeed everywhere.

A very fine white form of Cattleya Mossiæ is sent from the collection of W. S. M'Millan, Esq., of Maghull, Liverpool, which has flowered from an imported plant. We should consider it a fine C. M. Wageneri, as the only colour in the lip is the well-developed orange-yellow disc. A slight tinge of pale blush pervades the white ground, and in this alone, if it be constant, can a distinguishing character be found.

A handsome Thunia sent by Mr. J. W. Moore, of Appley Bridge, near Bradford, is suggested as a possible natural hybrid between T. Marshalliana and T. alba. It proves to be the rare T. Brymeriana, and suggests the question whether this is a plant of hybrid origin. We do not know if plants from such a cross have yet been raised.

A hybrid Cypripedium from the collection of H. J. Ross, Esq., of Florence, believed to have been raised from C. × Io grande and C. Lawrenceanum was noted at page 132. It is requested that this plant be named C. × Vanninii, after Mr. Ross's excellent gardener.

A very pretty hybrid Dendrobium has been sent by Messrs. F. Sander & Co., St. Albans, from the cross, as recorded in their books, Dendrobium aureum × D. sanguinolentum, which it is suggested can hardly be correct. The flower is white, somewhat after the general style of D. × endocharis, with pinkish-purple tips to the segments, and the disc of the lip of a somewhat similar but darker shade. We do not remember anything like it, and after the erratic behaviour of some recently recorded crosses should not be surprised if the record is correct—a point which may be left for the present.

A most beautiful albino of Cypripedium Reginæ, better known as C. spectabile, might recently be seen in the Orchid house at Kew, in which the rose-pink colour had vanished from the lip, leaving it as pure snow-white as the sepals and petals, the only colour being the small yellow blotch on the staminode, and the peculiarity gives it a most distinct appearance. The old specific name of C. album given by Aiton has been superseded by the still older C. Reginæ, but can be most appropriately revived for the variety —C. Reginæ album.

## DIES ORCHIDIANÆ.

I AM sometimes favoured with curious newspaper cuttings by esteemed correspondents, and here is one which may be described as a fair average production :—" A blue Orchid has just been discovered. It is the very first of its hue, and is to be called ' Dendrobium Victoria Regina,' because it is a Jubilee orchid." My correspondent naturally thinks I am interested in Blue Orchids, and some day I fully expect to receive one, carefully labelled, of course. I was naturally anxious to find out something more about the preceding, and, in due course, learned that it was a most wonderful Dendrobium, both on account of its beautiful blue colour and floriferousness, and that it will soon be a great favourite with Orchid collectors. Now this is just as it should be, but reading on I found that the blossoms were rich dark blue and white, an inch across, and were borne in trusses of three to twelve, lasting in bloom for several weeks. Lastly, I discovered that the sepals and petals were white, with a great blue blotch at the edges. By this time I naturally began to get a little mixed, and if it had only gone on to explain that the blue was really purple I think I should have begun to understand it. I fancy we shall hear of this Jubilee Orchid again.

---

Of course something of the kind was to be expected, and I only hope

that the plant will prove worthy of its distinguished name. But I think that a few of the names applied to certain Orchids during the past month have shown that the loyalty of their sponsors has rather outrun their discretion. Cattleya Queen-Empress, recently figured, is only a variety of C. Mossiæ, and not the best of its kind either, and some other varieties which I have seen distinguished by similar names, can hardly be described as distinct, and are likely to disappear as quickly as they came. It is a poor compliment to anyone to apply their names to ephemeral productions of this kind, but, happily, we have a Cattleya which seems destined to bear the Queen's name in perpetuity, as its distinctness is now well assured, and that is the beautiful natural hybrid between C. labiata and C. Leopoldi, known as C. × Victoria-Regina, of which the history, accompanied by a photographic illustration, was given at page 17 of the second volume of this work.

---

I am rather interested in the list of curious crosses given by Mr. Hurst at page 179, and hope he will let us hear of their progress from time to time, and especially if young seedlings are produced from any of them. Several such experiments seem to have terminated with the ripening of the capsule, but if the seeds of Epidendrum vitellinum crossed with Odontoglossum crispum have germinated (page 114), and if seedlings of crosses between Sobralia and Cattleya and between Epidendrum and Dendrobium are in existence (page 180), some further experiments of this kind are worth trying. And the results should be placed on record as a guide to others. It is probable that many strange crosses will yet be heard of.

ARGUS.

## BOTANICAL ORCHIDS AT KEW.

SEVERAL very curious little South African Orchids have recently appeared in the cool Orchid house at Kew, and among them Disperis secunda, a species with yellowish-green flowers of most remarkable structure, each sepal bearing a sac-shaped spur. The genus is very rarely seen in cultivation. Holothrix villosa is a second Cape species with minute green flowers, and H. Johnstoni, with much larger white flowers, comes from the Nyasa-land district of Tropical Africa.

## CULTURE OF CYPRIPEDIUM BELLATULUM.

WILL any of your readers kindly favour me with their successful culture of Cypripedium bellatulum. At first I could not grow it here at all successfully, as the plants kept damping off. I was advised never to let any water touch the leaves whatever, and to dip the plants. This treatment has succeeded much better, but still the plants are not what I should like, and I frequently find that wherever a leaf touches the pot it gets marked, and finally rots.

My plants are in loam—not good loam, but the best procurable here—and limestone. I purchased a short time ago a plant that had gained an Award of Merit at the Drill Hall, and was figured in the *Gardeners' Chronicle* (May 15th, 1897, p. 321, fig. 110). This plant is so far the picture of health, but it is potted entirely (as far as I can see) in peat and sphagnum.

A well-known grower told me the other day that they were growing their plants cool, and very successfully also. I may add that the atmosphere here is generally near saturation.

R. BROOMAN WHITE.

Arddarroch,
Garelochead,
Dumbartonshire.

The illustration above-mentioned shows a fine healthy plant with nine flowers, but no particulars of the method of treatment adopted are given, except the hint that "if a suitable position in a tolerably warm and moist house be found, they thrive without special treatment." It would be very interesting to have the experience of those who have tried different methods of treatment, with respect to compost, watering, and temperature, and particularly for a period of over a year. Mr. White should refer to the article by Reginald Young, Esq., at page 45 of our last volume, which seems conclusive as to the benefit derived from a loam, limestone and rubble compost, and occasional dippings when the compost is dry, instead of watering overhead. At Burford similar treatment is followed, and the plants are vigorous and free from spot. The latter plants are in the Warm house, but Mr. Young, and his namesake at Clare Lawn, both think that it does better in the Intermediate house, though its allies prefer the warmer treatment.—ED.]

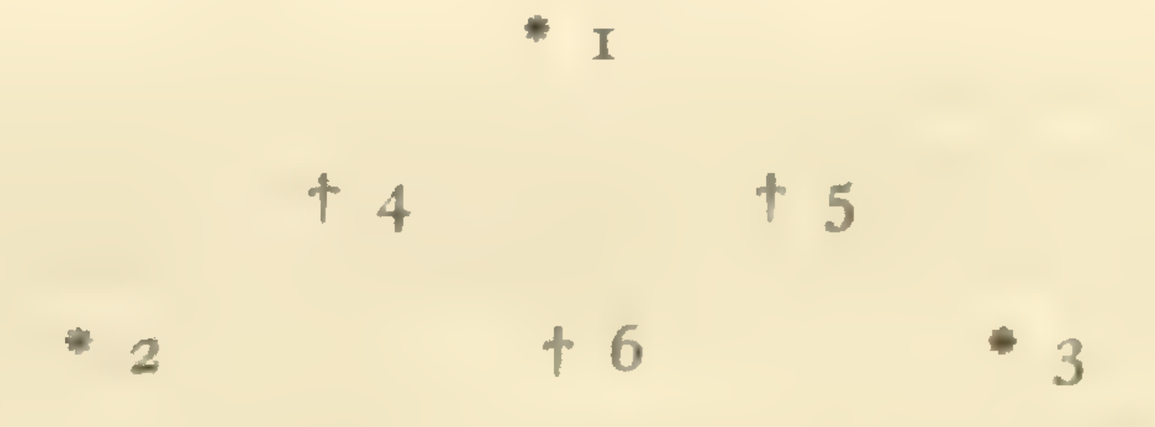
## CATASETUM BARBATUM ♂ AND ♀

A PLANT of Catasetum barbatum in the collection of E. S. Clarke, Esq., Oak Alyn, Cefn-y-bedd, near Wrexham, has produced a raceme with male and female flowers intermixed on the same spike. Of the ten flowers the four basal ones and the sixth were males, and the upper four females, while the fifth flower was in an abnormal intermediate state. The upper female flower was also slightly abnormal, as the dorsal sepal was spotted with brown. The female flowers are green, with short fleshy sepals and petals and a galeate lip, and the males have longer thinner sepals and petals spotted with brown, and a white lip broken up into many thread-like segments. The effect of the two kinds of flowers intermixed on the same raceme was very curious.

R. A. R.

## CYPRIPEDIUM CURTISII AND ITS ALLIES.

THE great general resemblance between Cypripedium superbiens, C. ciliolare, and C. Curtisii is well known, and some time ago a statement was made that the latter had been artificially produced by Mr. Alfred Bleu, by crossing the two former together. This, at the time, we pointed out, was obviously impossible (*supra*. II., p. 307), owing to C. Curtisii being a Sumatran plant, growing wild in quantity, while C. ciliolare is a native of the Philippines. A possible explanation of the statement which we suggested was that a hybrid with the parentage above-named might be mistaken for C. Curtisii, owing to its general resemblance to the two supposed parents. A hybrid sent by Messrs. F. Sander and Co., St. Albans, throws some little light on the question. Its parentage is believed to be C. ciliolare × Curtisii, yet the flower is so much like C. × Cymatodes (syn. beechense) as to suggest the question whether it is not the latter. The correctness or otherwise of the alleged parentage is a point which we cannot decide, but there is nothing in the flower which suggests any error in the record, and assuming it to be correct, it exhausts the list of possible combinations between the three species, as will be seen by the following diagram :—




1.=C. superbiens.
2.=C. ciliolare.
3.=C. Curtisii.
4.=C. × Lachmee.
5.=C. × Cymatodes.
6.=C. × new hybrid.

As the three species given in the left-hand column resemble each other so closely, it necessarily follows that their hybrids cannot be very distinct, and when the well-known variability of hybrids is taken into consideration, one can easily imagine that certain individuals derived even from different crosses might be practically indistinguishable. Reverting for a moment to the supposed C. Curtisii of artificial origin, we suggest either that it was C. × Lachmee, and not C. Curtisii, or that it was C. Curtisii and not a hybrid, and it would be interesting to have the point cleared up. Whether it is worth while to hybridise together such very similar species may be left for those who make such crosses to decide, but it is easy to predict that nothing very distinct can result.

## INSECTS INJURING DENDROBIUM PHALÆNOPSIS.

We have received from Dr. F. Pritchard Davies, of Maidstone, several small hemipterous insects which have been found on recently-imported Dendrobium Phalænopsis, and are said to certainly do much injury. It is difficult to destroy them simply by hand, and fumigation would seem to be of little avail, as they get down into the compost. The insects have not yet been identified, but it seems desirable to call attention to the matter at once, as others may have the same pest in their collections. We also take this opportunity of recurring to the bad irruption of Cattleya fly last year (see pp. 147-148 of our last volume), and of asking our correspondents whether the steps taken to check future outbreaks were effectual. No complaints having come to hand this year, we presume this to have been the case, but it would be interesting to have particulars, and especially whether it has succeeded in establishing itself in any collection.

## ARE VARIETIES CONSTANT.

Mr. Crawshay begins by saying, "Yes, excepting O. Pescatorei," but then goes on to negative his assertion by mentioning the fact that he has an O. crispum that was absolutely spotless with the exception of the lip in 1896, but that in '97 it proved a finely spotted form in all the six blooms it had. Personally, I am inclined to think that strength of bulb has a great deal to do with the value of the spots. I am sending you a single bloom from a spike of twelve flowers, all being similar, and a spike from the same plant, but from a weak bulb. You will observe that there are very few spots on any of the flowers, some being quite free from them. I have frequently remarked this to be the case.

R. Brooman White.

Arddarroch,
Garelochead,
Dumbartonshire.

The large flower has four or five somewhat confluent spots on the centre of each sepal, and rather more numerous smaller ones on the lip, while one of the petals bears a single spot. The spike sent has eight flowers of about half the size, and out of the aggregate of twenty-four sepals ten are unspotted, eleven bear a single spot, two have two spots, and one has three; of the sixteen petals one only bears a single small spot, but in the lips the spots are as numerous as in the large flower, though rather smaller. The difference is striking, both in size and in the different aspect of the sepals, and the cause is evidently lack of nutrition on the weak bulb,

as the flowers are much below the normal size. It is curious that the lip is only affected in size, not in the number of spots, and this seems to have been the case with Mr. Crawshay's plant. The behaviour of the plant at its next time of flowering should be noted, as it is interesting to know how far variation of this kind is due to vigour and good culture.—Ed.

## AN ALBINO GONGORA.

Some years ago, a friend about to leave the Colony gave me a small plant of Gongora, which he had bought from a local collector, and which, on my advice, he had carefully tended, as there appeared to be something uncommon in the colour of its pseudobulbs.

Shortly after the plant came into my possession, it blossomed, and, as I had suspected, it turned out to be something apparently new.

Of the habit of G. atropurpurea, but even more robust, and with deeply-channelled and tapering pseudobulbs, slightly serrated at their apices, the new plant differed even more by producing from the base of its pseudobulbs (as is usual with all Gongoras) ivory-white spikes, which bore immaculate flowers of the same colour. These pendent spikes were from 24 to 30 inches in length, and the flowers were very fragrant, lasting, also, some weeks in beauty.

Since then the plant has grown vigorously, and flowers regularly in February, but though I have never ceased to search for another of its kind, I have not yet been successful.

In February last it was three feet or more in width, and produced 25 spikes, with about 30 pure ivory-white flowers on each spike. It then received a first prize in a Horticultural Show here, and a special prize for the best plant in the Show, and won the admiration of all who saw it.

Perhaps some of your readers can say what variety of Gongora it is, or whether it is something new.

Port of Spain, T. I. P.
Trinidad, B.W.I.

It is highly probable that this is an albino of Gongora nigrita, Lindl., of which an account was given at page 341 of our last volume, though the point can only be settled with certainty on comparision of living or dried flowers. Both the species and its white variety are natives of British Guiana, and it is not unlikely that they may also occur in Trinidad, though the point still remains to be settled. It is just possible that G. atropurpurea and G. nigrita are not always distinguished from each other, though in the structure of the lip they are appreciably different, but the latter only differs from its white variety in colour.—Ed.]

## ORCHIDS AT MESSRS. VEITCH'S.

ORCHIDS have long been one of the prominent features of the Royal Exotic Nursery, and the removal some years ago of the rich collection of hybrid seedlings to the purer air of Langley has made no difference to the collection of established plants, which invariably make a good show, and particularly at this season. The rockwork house on the occasion of a visit early in June contained a most attractive display, and the method of showing them here adopted is far more effective than the old-fashioned one of staging them. Some growers prefer to let their Orchids flower in the houses in which they are grown, holding that their removal to a Show house when in bloom is prejudicial to the health of the plants, but with proper care the injury, in the majority of cases, is inappreciable, and when a Show house is provided the rockwork arrangement is such a great improvement that the wonder is it is not more frequently adopted. It forms a far more graceful setting for the plants than an unsightly stage, as it provides nooks and crannies for graceful ferns and foliage plants to grow in, and owing to the irregular surface suitable spots can be found on which specimen plants, or those with long graceful flower-spikes, can show to the best advantage. The rockwork, however, only contained part of the interesting plants mentioned in the following notes, as most of the Orchid houses contained numerous plants in flower.

Among hybrids raised by Messrs. Veitch were a fine plant of the handsome Cymbidium × eburneo-Lowianum, the brilliant Epiphronitis × Veitchii, Masdevallia × Asmodia, Selenipedium × grande, a fine plant with three spikes, and a number of good Cypripediums. A good plant of the rare little Oncidium pulchellum, with its white and purple flowers, was very attractive, also a batch of nine plants of O. pulvinatum, bearing large panicles of orange yellow flowers, the graceful O. phymatochilum, several good O. ampliatum, the handsome O. Kramerianum, and O. concolor. Two plants of Cœlogyne Dayana each bore eight graceful racemes. A dozen plants of Dedrobium Bensonæ were loaded with flowers, and of D. Phalænopsis twice as many plants were already in bloom, showing the usual amount of variation. Several plants of the brilliant D. glomeratum were also in flower. Miltonia Roezlii and Cypripedium superbiens were each represented by a good batch of plants, also the brilliant Epidendrum vitellinum, Masdevallia coccinea and Veitchiana, Odontoglossum cordatum, crispum, and others. We also noted O. Harryanum, well-flowered plants of Lycaste Deppei, Maxillaria Sanderiana, Cattleya luteola, C. Warneri, C. Walkeriana, and numbers of the usual showy species which flower at this season.

## TREVORIA CHLORIS.

THIS is the second of a number of new genera of Orchids which I have discovered during the twenty-one years of my travels in the Andes. Both Trevoria and my Gorgoglossum are old acquaintances of mine, but owing to their great rarity, and their growth in habitats very difficult to reach, insufficient floral material have made it hitherto impossible to publish them.

Gorgoglossum Reichenbachianum, Lehmann (M.S., 1879) was met with in December, 1879, in one single specimen, on the Western Andes of Ecuador, at an elevation of 300 to 600 mètres above sea level. The single specimen was duly given to the late Prof. Reichenbach; but the flowers, having lost their pollinia, he did not venture to describe the plant, and it wandered, with some 3,000 other members of the herbaria, for twenty-five years to the grave at Vienna. Some eleven years later, when I knew already the fate of my unique Gorgoglossum, I undertook an especial journey to the locality in order to secure a few plants for cultivation in one of my estates in the Cauca. Only five plants were found, of which to-day one exists in my possession and another in that of Sir Trevor Lawrence, the rest having been lost on the sea voyage.

My first acquaintance with Trevoria occurred in 1887. Only three specimens were seen, bearing thin, drooping spikes, about 40 cm. long, of thickly-set seed vessels, but no flowers. The plants I tried to take to the Cauca for cultivation, but, alas! they were stolen from me by some rascal at Esmeralda during my absence from the steamer, together with a number of other botanical treasures. Nothing more was seen or heard of this plant, which, by-the-bye, looked quite novel and interesting, until last year, when, during an exploration of a certain portion of the Western Andes of Colombia, with a view of projecting a map on behalf of the Cauca Government, a few plants of this species of Orchid were observed. The species found in Colombia is, however, quite distinct from that of Ecuador. The latter grows at an elevation of 500 mètres above the sea, and produces flower spikes of from twenty to thirty flowers, the size and character being as yet unknown; while the Colombian one inhabits a region from 1,500 to 1,700 mètres above the sea (as far as observed), and bears racemes of only three to five—commonly only three flowers.

As a genus, Trevoria is very characteristic and distinct. Its nearest neighbours are Coryanthes, Schlimia, Stanhopea, and Gorgoglossum, but it is distinguishable at first sight from either of them. Trevoria Chloris produces large, fleshy, wholly green flowers, placed on the drooping spike in the manner of the buckets on a dredger chain. The narrow disc of the lip, and the thick coriaceous process at its base, are the only different-coloured organs in the flower; they are pure white. Both from a

morphological as also from a physiological point of view this genus is very novel and interesting. The position of the column and lip, standing straight upright in an urceolate manner, the thick, fleshy process at the base of the lip being of exactly the same length as the column, and standing parallel and closely adpressed to that organ, the peculiar shape and insertion of the stigma, and several other items are wholly novel, and the arrangement of them to each other may set at naught some of the pet views of modern hypercritical speculators with respect to the aid of insects in the fertilisation of Orchids, or give rise to quite new conceptions.

I have named this genus of Orchidaceæ in honour and commemoration of Sir Trevor Lawrence, one of the most enthusiastic Orchidists that ever lived. Trevoria has to answer our purpose; Lawrencia and Lawrencella being already in existence in Compositæ and Malvaceæ respectively. May Sir Trevor's love of Orchids *perdure sempervirent* as Chloris, the goddess of flowers.—F. C. Lehmann in *Gard. Chron.*, May 29th, p. 345, suppl., fig. 128.

## THE DESTRUCTIVE COLLECTION OF ORCHIDS.

Few, if any, of the admirers of Orchids, "who sit at home at ease," have an idea of the extent of the wholesale destruction of these plants which occurs in the process of their collection, particularly in Venezuela, and in the collection of Cattleyas. Valleys are denuded of their primeval growths, for the forest giants, and the highest branches of some of these, is the home for some species of Cattleya, particularly the ever-varying forms of Cattleya Gaskelliana.

In order to secure the best plants these trees are felled, and from the harvest thus procured only the very finest plants are taken, the smaller ones and seedlings being left to perish with their natural support on the ground.

A collector, who is also an Orchid grower, assured the writer that he bitterly regretted the wanton destruction thus caused, but dealers had to be satisfied, they did not want "piece" or small plants, and the enormous cost of transport in such places in South America made this destructive system imperative on anyone who wanted to make his expedition pay.

Very recently the writer saw about 1,500 fine plants of C. Gaskelliana being prepared in Port of Spain for shipment to Europe, and the collector, who had brought them with him from Venezuela, informed him that he had cleared out a valley in this country of this species of Cattleya, having left on the spot about 10,000 small plants, pieces, and seedlings to perish. The 1,500 were only selected plants, which he felt sure would satisfy the demands of his London or European employer. Similarly, through wanton

destruction, which, however, due to wise laws, is now almost impossible, many of this Island's finest Orchids were being quickly and surely exterminated. Even now the well known Oncidium Papilio is getting scarce, and the writer, foreseeing the probable difficulty of getting good plants in the near future, has started a nursery for these plants, and 500 of them, nearly all seedlings gathered from a tree which was being felled, flourish under his eye.

In the same way, some years ago, a large quantity of seedling Cattleyas came into my possession, and were treated. Some were planted on wood blocks, but these died, while the majority was affixed to young trees in the garden, where, without the slightest care, they have grown and flourished. In the next season some will flower for the first time, their pseudobulbs having only reached their full size this year.

The species is C. Gaskelliana, which grows only at considerable elevation on the mainland of Venezuela, and I was afraid that the drier climate of this Colony would not be favourable to its growth here. In this respect, however, I have been agreeably surprised.

The hilly region of this Island is well suited to the cultivation of South American Orchids, as we have many of the Venezuelan and South American species among our natives. East Indians thrive also very well, but it is only on the highest mountain tops (3,000 feet high) that the cooler species of tropical Orchids would flourish. Cattleyas, however, thrive well, as I have shown, and a nursery of these would serve to preserve the rarer species which are being rapidly exterminated.

T. I. P.

Port of Spain,
Trinidad, B.W.I.

There is a melancholy interest in recording the above facts, and we can only hope that the Government of Venezuela will place some restriction upon such wanton destruction before it is too late, as other Governments have done. The wholesale destruction of the trees on which these plants grow, and with them the multitude of small plants and seedlings, is lamentable, for if these were left when the larger plants were collected the supply might be prolonged indefinitely, whereas the above account recalls the story about killing the goose which laid the golden eggs. The steps taken to preserve the seedlings of Oncidium Papilio and Cattleya Gaskelliana, mentioned above, are very interesting, and suggest possibilities of future development, as it is not every one who can grow Cattleyas on trees in his own garden. Our readers will remember a most interesting account of Orchid culture in Trinidad from the pen of our correspondent, which appeared at pages 274-277 of our third volume.—Ed.]

## ORCHIDS AT BURFORD.

Some idea of the richness of Sir Trevor Lawrence's choice collection can be formed from the interesting groups which are staged at the Drill Hall, Westminster, from time to time, and it may safely be affirmed that something of interest may be seen at Burford throughout the year (a rather full account of the collection was given at pages 14-19 of our first volume). At the present time the beautiful hybrid Vanda × Miss Joaquim forms the chief centre of attraction, and Mr. White must be congratulated on being the first to flower it in Europe. As a note will be found on another page it need not be further described here, beyond saying that the flowers have almost the shape of V. Hookeriana, with the colour of V. teres. A group of the latter with an aggregate of fourteen spikes served admirably to show its distinctness, but the other parent was not in flower. The rare white V. teres candida was also in flower.

Even more interesting in some respects it was to see a plant of the new Eulophiella Peetersiana, with a pair of sturdy young growths, with six and eleven leaves, ranging from 3 to 4 feet long by 3 to 3½ inches broad. It has already been described in these pages (pp. 67, 101), and is certainly a most distinct and remarkable Orchid. Coming from Madagascar, Mr. White naturally chose a good position in the Warm house, and the plant has started with such vigour that we may hope to see the flowers in due season. And while touching on plants out of flower, we may mention that a plant of the remarkable Dendrobium spectabile, whose history was given at page 356 of our last volume, is growing nicely, and judging by appearances, its flowering is now only a question of time. The remarkable Masdevallia deorsa is also nicely established, and its first flowering in Europe is awaited with interest. It is pendulous in habit, and an attempt to make it grow upright, like its allies, only resulted in a young leaf turning downwards into the compost and losing its tip. The leaves are purple underneath, and dark, somewhat glaucous green above. Pleurothallis strupifolia, not in flower, was pointed out as having a similiar habit. Very interesting it was, too, to see a nice healthy little plant of Cypripedium Fairrieanum, with two smaller pieces which have been taken from it. All are growing nicely, in intermediate temperature with C. × Leeanum, a fact worthy of note in the case of so valuable and capricious a plant. It has previously been noted that it does not succeed so well in the Warm house as in intermediate temperature.

In the Masdevallia House, many interesting species were in flower, including three plants of the beautiful M. rosea, M. Davisii with four flowers, M. × Stella with sixteen, several plants of M. × Courtauldiana, the deep ruby-red M. Rolfeana, M. × Ajax, M. Reichenbachiana, M.

approviata, &c. M. coccinea and its varieties have been a mass of colour, but were fast going over. It is remarkable how well Masdevallias do in this house, and Mr. White attributes this partly to keeping the plants rather drier at the root than is sometimes considered necessary. Here, too, is a small batch of hybrid Odontoglossums, found seven years ago as tiny seedlings on a pot of O. maculatum from the Buchan collection. One of them flowered a few weeks ago, and proved to be a form of O. × Wilckeanum. Other interesting things in flower were Meiracyllium gemmæ, Stenoglottis longifolia, Pleurothallis Grobyi, and Colax jugosus, one flower of the latter, having changed to green, told of successful fertilisation, and as the beautiful Zygopetalum × Perrenoudii was the pollen parent, it is hoped that something good may result from the cross.

In the Warm Departments many interesting things were in bloom; Phalænopsis Mariæ with a panicle of sixteen flowers, Aërides expansum Leoniæ, Renanthera matutina, a fine plant of Cirrhopetalum Cumingii with forty spikes, nearly over, the remarkable Bulbophyllum barbigerum, a good Selenipedium × grande, Cypripediums Druryi, Victoria-Mariæ, and Chamberlainianum, a fine clump of C. barbatum Warneri, C. superbiens with divided lip, a good C. Mastersianum, and numerous other species and hybrids which it would be tedious to enumerate.

Cattleya Warscewiczii was represented by eight fine spikes of bloom, other noteworthy forms being C. dolosa and C. Schilleriana. The most striking Dendrobiums were a well-flowered D. crystallinum, D. glomeratum, D. suavissimum with fourteen fine spikes, D. tortile, D. cariniferum, and D. sanguinolentum, and of Odontoglossums, the handsome O. × excellens Sanderæ with ten flowers, O. × cristatellum and O. apterum candidulum. Among miscellaneous subjects were noted two plants of the rare little Epidendrum Endresii, E. Medusæ, E. Wallisii, well-flowered, the striking Ornithocephalus grandiflorus, the rare O. Warscewiczii (bifrons), Oncidium nubigenum, Disa × kewensis, Luisia volucris and L. Cantharis, Platyclinis filiformis with 94 young spikes, Masdevallia Wendlandiana, which thrives in intermediate temperature, well-flowered Angræcum falcatum, and numerous others which must be passed over unmentioned.

One or two cultural hints are worth recording. Mr. White has been trying American peat (the roots of Osmunda) for Miltonias, and finds them do better in it than anything else. Lælia anceps also thrives, but Cattleyas do not root well in it, and those tried in it have deteriorated, and are being put back into ordinary peat. A plant of C. Bowringiana in English peat has not been potted for seven years, and is still as vigorous as ever. Vanda Amesiana and V. Kimballiana thrive remarkably well in intermediate temperature, better than under either warm or cool treatment.

The seedlings must not be passed over entirely, as they are a most

interesting lot. There are nice little plants of Cattleya × Hardyana, raised from C. Warscewiczii × Dowiana aurea, also of Lælia xanthina × Cattleya Dowiana aurea, and Cattleya labiata (true) × Sophronitis grandiflora, both very promising crosses, and these are only examples out of a series of crosses, represented by numerous healthy little plants, whose flowering may be anticipated in due course. In short, this department is fully as interesting as any other in this thoroughly representative collection.

## NOVELTIES.

CATTLEYA HARRISONIANA, COMTE VISART'S VARIETY.—A white variety, with a few minute purple spots on the back of the sepals, and a pale golden-yellow disc to the lip. It appeared in Messrs. F. Sander & Co.'s Nursery at Bruges, and is now in the collection of Comte Visart, St. Croix, Bruges. —Kränzl, in *Gard. Chron.*, Oct. 31st, 1896, p. 520.

CLEISOSTOMA ZOLLINGERIANUM, Kränzl.—A curious species, which flowered in the collection of M. Zollinger Jenny, of Zurich. It is allied to C. Dawsonianum, Rchb. f., and has a thick cushion of golden yellow hairs on the disc of the lip. The flowers are yellow, with some purple stripes on the sepals and petals.—*Gard. Chron.*, Jan. 30th, p. 70.

BULBOPHYLLUM PTILOGLOSSUM, Kränzl.—A Madagascar species, discovered by the late Johannes Braun, and flowered with M. Hermann Wendland, at Herrenhausen, near Hanover. It is allied to B. calamarium, Lindl., and has smaller flowers with the sepals green, spotted with purple, and the lip covered with purple hairs.—*Gard. Chron.*, May 22nd, p. 330.

DENDROBIUM VICTORIA-REGINÆ, Loher.—Described as one of the most wonderful Dendrobiums, both for its beautiful blue colour and for flowering, and one that will soon be a great favourite with Orchid collectors. Its branching stems produce great numbers of richly dark blue and white blossoms an inch across, borne in trusses of three to twelve, and lasting in bloom for several weeks; the sepals and petals white, with a great blue blotch at the edges. It is presumably of Philippine origin, and grows at 6,000 feet altitude. Its affinity is not stated.—*Gard. Chron.*, June 19th, p. 399.

DENDROBIUM PAPILIO, Loher.—Described as a charming species of the crumenatum group, with solitary, pale rose, fragrant flowers nearly two inches in diameter, which only last one or two days. The sepals and petals are ovate, and the lip stipitate, broad and undulate, with a few purple veins.—*Gard. Chron.*, June 26th, p. 416.

## DENDROBIUM NOBILE.

At page 104 of our April number an account was given by Mr. Eichel of a magnificent specimen of Dendrobium nobile in the collection of Mrs. G. Knowles, Hollin Hall, near Bradford, and we have now much pleasure in reproducing a photograph of the same, which has been kindly communicated.

FIG. 10.—SPECIMEN OF DENDROBIUM NOBILE.

The illustration speaks for itself; but it may be repeated that the specimen is growing in a 14-inch basket, and bears 1,134 flowers. A most shapely specimen, covered with flowers, it must have presented a charming sight to those who had the pleasure of seeing it in the living state. It will be observed that the foliage on the previous year's growths is well preserved, which adds greatly to the appearance of the specimen, and Mr. Moorby,

the gardener, attributes this to the treatment adopted. The plant is top-dressed each year with fresh peat and sphagnum, which keeps the compost sweet; and he avoids anything like a severe rest, witholding water gradually, and never letting the plant shrivel to any appreciable extent. It is grown with others in a house chiefly devoted to tomatoes. Five years ago, when Mr. Moorby took charge of the collection, it was a starved specimen in an 8-inch pot, with bulbs about ten inches high, but now the longest ones are said to measure 4½ feet, so that there can be no question about the success of the treatment adopted. It is always a pleasure to see a really well-grown specimen, and many of our readers will be glad to have an accurate representation of the one now under consideration.

## MR. BULL'S ANNUAL EXHIBITION.

Mr. William Bull's Annual Exhibition of Orchids, from May to July, forms an admirable illustration of what can be done with a plentiful supply of showy Orchids and light foliage plants in an ordinary house, where the straight lines cannot be got rid of, and only neutralised to some extent by the arrangement of the plants. A visit, early in June, to the large show house revealed the usual assemblage of the well-known showy species of the season, the general effect being enhanced by the use of a mirror at either end, which appears to increase the length of the vistas on either side. On looking round and going into details, one is able to single out a number of forms which, either by their superior merit or rarity, attract special attention, and a few of these are here recorded.

Such species as Odontoglossum crispum, Miltonia vexillaria, Cattleya Mossiæ and Lælia purpurata are, of course, represented in quantity, and by various forms, two varieties of the latter, L. p. bella and versicolor, being specially noted. The last named is a grand flower, having the petals veined with purple at the apex, and the lip very broad and dark, and is said to have changed hands at the price of 150 guineas. Among Odontoglossums we noted, among numerous others, a fine O. × Wilckeanum, O. × mulus crocatum, said to be the identical plant named by Reichenbach, O. Uroskinneri and O. Reichenheimii, and the graceful and beautiful O. citrosmum, a form of the latter, O. c. concolor, being remarkable for its deep rose-pink flowers, nearly uniform in tint, and darker in colour than O. c. roseum beside it. Oncidium was represented by some good O. macranthum, the handsome O. Gardneri, good forms of O. Papilio and Kramerianum, the charming O. cucullatum, and various others, and Dendrobium by the richly coloured D. clavatum, D. transparens, and other well-known forms. A very light form of Calanthe × Veitchii was curiously out of season; and

a plant of Epidendrum Medusæ was conspicuous, bearing nine of its remarkable red-purple, fringed flowers on five growths.

Of Masdevallias there were numerous kinds, not only of the brilliant flowered group, and the Chimæra section ; but such interesting little plants as M. peristeria, Wageneriana, corniculata, tridactylites, and several others which were placed round the edge of the water tank. M. bella and the forms of M. Chimæra, of course, were in hanging baskets.

Other interesting plants in flower noted were the pretty little Cymbidium tigrinum, with two racemes and half-a-dozen flowers, several good forms of Epidendrum Wallisii, the rare Epidendrum Frederici-Gulielmi, Cœlogyne pandurata, with a spike of eight fine flowers, the rare Brassia maculata, Promenæa xanthina, Aërides Houlletianum and Fieldingii, Saccolabium ampullaceum, Vanda Parishii, some finely flowered Cypripedium barbatum, and others. The plants are continually being changed as they pass out of flower and succeeding ones come in, and thus a brilliant display is maintained throughout the season.

## VANDA × MISS JOAQUIM.

This very beautiful hybrid has now flowered for the first time in Europe, in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking. Its history was given at page 245 of our first volume, when it flowered at Singapore. It was raised by the lady whose name it bears, from Vanda teres and V. Hookeriana—the former presumably the seed parent—and well combines the characters of the two parents. The habit is almost precisely that of V. teres, but rather more climbing, the plant being seven feet high, and the colour of the flower also closely resembles the same species, while the shape of the flower, and particularly the lip, is almost that of V. Hookeriana. The front lobe of the lip is broader than long, measuring two inches across, and flat; the side lobes do not meet at the tips, as in V. teres: the spur is smaller, and more acute ; and the disc of the lip has much less yellow on it. As the flower becomes old it gradually changes almost to white, except the inside of the side lobes and base of the front lobe, the latter being covered with innumerable minute reddish dots. In order to mature the growths and induce it to flower, Mr. White has kept the plant in the sun as much as possible, and the result is a fine raceme of flowers. It is a very beautiful hybrid, with a much better constitution than V. Hookeriana, which it most resembles in the flowers, and is certainly a great acquisition.

## CALENDAR OF OPERATIONS FOR JULY.

By W. H. YOUNG, Clare Lawn, East Sheen.

THE grower's time will now be mainly taken up with watering, damping, cleaning, and other similar operations conducive to the well-being of the plants in the different departments, few subjects demanding attention in other directions, as the majority have been either top-dressed, re-mossed, or potted afresh. Of course, in large collections there are always individual plants of various species that need fresh material, and no matter whether seasonable or not, these individuals should be attended to when occasion demands, but, as stated above, the first and foremost duty to be performed is to see that no plant suffers from the lack of the necessary liquid element, and that they be kept clean and free from injurious insects. To further this latter condition the houses should have a mild fumigation at frequent intervals with "Richards XL.All vaporiser," a compound which, since its introduction and general adoption, has lessened the worries of the gardener and been the means of benefitting the general appearance of the occupants of our houses. With this preparation the plants may be fumigated whether they be in flower or not, without any fear of injury resulting to the blooms. There are, I know, a few isolated cases in which the flowers have been discoloured, but not to any great extent, the tails of Masdevallia blooms, for instance, sometimes change colour, those of M. tovarensis turning pink under the operation. If possible a dull evening should be selected for the performance, or left until late in the evening, say, eight or half-past, when the sun has lost power to harm. For a day or so afterwards the houses should be shaded earlier, so that the sun-light does no harm, this being the means of preventing injury, which is more often than not attributed to the fumigation instead of to the unobservant gardener. In the matter of sponging Orchids, we find that nothing is needed other than clean rain water, excepting when we have an extra-infested plant, then we use a little soft soap dissolved in warm water. It is not advisable to sponge any plant when there are any young and succulent leaves or growths that are likely to be injured, excepting when it is absolutely necessary for the removal of unwelcome guests, and then the utmost care should be exercised to prevent any breaking or disfigurement of the leaves or growths. This is especially applicable to the Phalænopses, that only make one or two leaves in a season and which are very tender in a young state.

It will be as well now to take a glance through each department, to note the progress made during the last six months, and call attention to any matter or subject that should have the grower's careful consideration and attention during the summer months. Starting with the Cool house, we find that the majority of the Odontoglossums have done flowering for this season

—which, by the way, has been an exceptionally good one, principally due, no doubt, to the mild winter—and should now be given a short rest prior to starting into growth again, by keeping them rather dry at the root. If not treated in this manner new growths will appear immediately the plants have bloomed, and thus cause a double exhaustion of the bulbs, also the following bulb will not be up to the usual size and strength, but by giving the plant a rest it will break stronger and produce better ulterior results. Ada aurantica has also flowered, but is still developing its growths, and consequently should still be watered freely. Oncidium macranthum and others of this section are always more or less in a state of activity, and should be given water accordingly. O. crispum, Marshallianum, and allied species should have less applied direct so soon as the spikes are cut, for the same reasons as those adduced with reference to Odontoglossums. O. varicosum is now beginning to grow, after having enjoyed a rest, and in their case more water will soon be needed. The Masdevallias have made excellent progress, both in foliage and flower, the latter seldom attaining such richness of colouring as they have this season. Those of the caudata and Harryana sections have now passed out of bloom, but this will make no difference to the quantity of water required, as root action and leaf development are still in a vigorous condition. If any of the smaller growing kinds are in material that has become sour or worn out, they would be benefited if renovated now, though I do not recommend potting these at this season, excepting when necessary from the above cause.

Passing into the warmer division of the Cool section, we find that Miltonia vexillaria has only a few isolated representatives in bloom, the majority having gone over, M. v. superba, Leopoldi, and Klabochorum have yet to bloom, but for all that a general treatment is still possible as far as watering is concerned, though in the matter of spraying overhead, only those that have flowered should be done. The Pleiones are now fast forming their bulbs, and should have every encouragement to assist in the development of good, sound bulbs, by giving an abundance of water, occasionaliy diluted with liquid from the farmyard, and the leaves kept clean and free from red-spider. No doubt the tips will soon begin to decay, but as this is natural, no notice should be taken, and not keep continually trimming the decayed portion off, with the mistaken idea of enhancing the appearance of the plants. Cypripediums of the cooler section, such as C. insigne, villosum, Boxallii, and the hosts of hybrids having one or other of the above for one of their parents, will need watering almost daily, as also will a large number of the warmer growing kinds, always excepting the concolor section, Stonei, philippinense, Rothschildianum, Parishii, Lowii, Haynaldianum, and others of a similar nature. I may mention here that a few months ago we hung our plants of C. bellatulum up in the house where

Miltonia vexillaria is growing, and it is most remarkable how well they are doing—far better than where they were in the stove. I think that position has more to do with success in growing these than the choice of potting material. Selenipedium Sclimii, which is such a difficult subject to manage, should be potted in a mixture of half peat and half loam, with a little moss, and stood in a moist position in an Intermediate house, always supplying it with plenty of water at the root, but on no account allowing any to lodge in the leaves. When well grown it is a most desirable Orchid, but otherwise it is a continual eyesore.

In the Cattleya house we now have plants in all stages of growth. C. Warneri, Gaskelliana, and Warscewiczii have about done flowering on the newly-made bulbs, and will now be pushing out quantities of roots from them, hence water in abundance will be necessary. C. Trianæ and labiata have their growths in a forward state, and in a great many instances are showing their sheaths. They, too, should not suffer for want of water, but still the material should always get on the dry side before another supply be given. C. Mossiæ and Mendelii should still be only watered in moderation, for although rooting freely, the moisture in the atmosphere goes a long way towards satisfying the needs of these two species. The same remarks apply to Lælia purpurata, which should not be encouraged to make growths too soon, as it is those bulbs that are produced in the autumn that always give the best return in the shape of flower-sheaths. Cattleya Bowringiana is now growing apace, and will need more water, and when new roots spring from the cushion-like base new material may be given. Repotting is best done immediately the flowers have gone over. C. Skinneri requires large supplies of water when growing, as also does C. velutina and other thin-stemmed species. C. Dormaniana will be growing freely now if in a suitable position, such as may be found at the coolest part of the house, and new material in very small quantities may be given when root action takes place.

Lælia crispa, often wrongly termed a Cattleya, will flower this month or early in the next, and it is one that would almost live entirely without water applied direct, as the quantity required in this way is so small. L. tenebrosa should have a good rest after flowering, or the growths produced will be poor and sheathless. A pretty and distinct Orchid now in flower is Lælia crispilabia, or, as it is often called, Lawrenceana—a dwarf, close-growing species, with short pear-shaped bulbs and thick leaves, the flower-buds being enclosed in the latter, like those of Sophronitis grandiflora. It seems to thrive very well on teak-wood rafts, with a mere scrap of peat and moss placed about its base, and given water in quantity only when rooting freely. L. anceps should be syringed morning and afternoon now, and otherwise supplied with an abundance of water, and, where possible, the

shading should be taken off early in the afternoon, and a high temperature induced by closing the ventilators for a few hours, always opening the bottom ones again at night, so that all superfluous moisture may be dispelled. L. autumnalis, albida, furfuracea, and Gouldiana require the same treatment, excepting that they should not be syringed sufficiently heavy to allow the water to lodge in the undeveloped growths, for if it does, and a change of weather from fine to dull or wet takes place, the growths are apt to damp off.

We grow most of our Dendrobium nobile in the Cattleya house, as there we obtain far better results than from those grown in the stove. The reason is, I think, that the former do not commence to grow so early in the year, when the weather is so changeable, and therefore the growths produced are not subjected to such fluctuations of heat and light, and the progress made now is of a more sturdy and lasting character. They are suspended from the apex of the roof, where during the day-time the temperature is high, and yet is tempered by a free-circulating air. D. × Ainsworthii also does well in this house. The majority of the Dendrobes are growing now, and all of those that are rooting freely must not be allowed to suffer from dryness at the root. If there should be any plants of D. Wardianum, crassinode, or nobile that have finished their leaf development, they should be removed to a cooler and more airy situation, but be still supplied with the requisite quantity of water. A vinery from which the fruit has been cut is an excellent place for them to mature and ripen their growths.

Aërides, with few exceptions, are summer flowering plants, and there are few persons but will admit that they are exceedingly pretty and highly interesting Orchids when cultivated successfully; yet, for some unaccountable reason, they are entirely out of the running now, and were a person to give two hundred guineas for an Aërides he would, I am afraid, be considered in a state of *non compos mentis*. However, the lack of public favour in no wise detracts from the beauty of their flowers, which in several instances emit a most delightful perfume, and I am sure if some of our clever Orchid men were to take them in hand again, and prove that they are manageable subjects, the present generation of Orchid amateurs would be induced to invest their money in them, and hence secure their importation in quantity again—that is, if they are to be found. No Orchid is much easier to grow during the summer than the majority of these, but when winter comes most of us are baffled. Now is the time to think about what we have to contend with in the winter time, and instead of growing these in a hot, close atmosphere, thus inducing growth of a weak and flimsy nature, we should try by every means at our disposal to get the plants to build up good, strong, and well-matured leaves, that will pass unscathed

through an ordinary British winter. To this end, as much air as is reasonable should be admitted to where these are growing, and then, with heat and moisture, the plants will have a better chance of acquiring a good and lasting constitution. Those grown in the Cattleya house never fail to give us a good return, such as A. crassifolium, crispum, and Fieldingii, though for the better appearance of the foliage a heavier shading might be preferable. The peculiar A. Vandarum is decidedly a Cool subject, and may be grown along with the ordinary Cool house stuff during the summer months, removing it at the approach of winter to a slightly warmer position. It should be fixed to teakwood rods, and these placed upright in pots filled with crocks and surfaced with moss, which all through the growing season should be saturated with water daily. A. maculosum is one that does not relish such a plentiful supply of water as most of them do, its roots being few and short, and of a less succulent nature than others. The Saccolabiums are nearly allied to the above family, and in many respects require the same treatment, one difference being that much less water at the root is needed, though, if anything, atmospheric moisture is relished more by these than the former. S. cœleste is a delightful Orchid when in bloom, but how many are there that keep it in health for many years? As before stated, it is in the winter when they go wrong, owing as much to improper treatment during the growing season as to our uncongenial climate during the former period. This Orchid should succeed grown with the Dendrobes, and rested in the same way. All Saccolabiums require a short, quick-growing season, and a long period in which to ripen the newly-made growth, so as to be able to tide over the vicissitudes of winter. The range of colour in this genus is as great as in the Cattleya family, ranging from rosy-purple in S. ampullaceum to blue in S. cœleste, and from yellow in S. falcatum to white and rose in S. præmorsum. The genus Vanda is another neighbour of Aërides, though of a more aristocratic position, and therefore obtains a larger share of patronage than the two previous genera. What is more wonderful than Vanda teres (which now holds a higher position still by reason of the lovely hybrid, called Miss Joaquim, produced from it) and V. Hookeriana? Few obtain much success with this species without they have a suitable place to grow it in. Years ago we used to grow and flower it well in a corner of a stove, but when, for certain reasons, we had to give the house up, and the plants were put in a corresponding position in the next house, success has been wanting. It is easy to say they require heat and moisture when growing, and to be kept dry during the rest of the year, but, as I said above, that is not all—one must have the proper position. V. Sanderiana is rooting freely in a corner of the stove, where it obtains as much light and heat as the Dendrobiums, the plants now being well supplied with water. V. tricolor and suavis are flowering and

growing nicely in a warm house, with thicker shading material on it. Where practicable, these plants should be stood on ashes on the floor, but not if the latter is a long way from the roof. V. Lowii should also be treated like the above. V. Amesiana and Kimballiana are not easy subjects to treat, though probably, like the one spoken of previously, position has a lot to do with success or the absence of it. We have both growing with the Phalænopses, and although they might be better, I have seen many thousands worse. We never give water frequently, not even when rooting freely, as the atmosphere is generally saturated with moisture. [See an article on their culture at page 306 of our first volume.—Ed.]

The Phalænopses must now be kept in a continual moist condition, thoroughly shaded from all sunshine, and fresh air admitted to them when that outside is not too dry or cold. With these are grown the lovely Eulophiella Elizabethæ, which is now just beginning to root from the new rhizome. Water in large quantities should now be given frequently, and until the growths have reached their full development.

## THE MANCHESTER ROYAL BOTANIC SHOW.

The great Whitsuntide Show of the Manchester Royal Botanical and Horticultural Society was held at the Gardens, Old Trafford, from June 4th to 10th, and the Orchid exhibits were above the average of recent years, both in number and quality.

The first prize for the best miscellaneous collection (limited to Amateurs) was secured by W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), for a magnificent group, in which splendidly grown and flowered Odontoglossums formed the leading feature. It included some choice forms of O. crispum, the best being O. c. Thompsoni, a large, finely-shaped, well-blotched form, spotted with purple on a flushed ground. O. citrosmum and O. luteopurpureum were represented by many good examples, and O. nævium by a superb specimen with about twenty spikes. Other fine things were O. Reichenheimii with much-branched spikes, a capital form of O. × Wilckeanum with a long raceme, O. × Coradinei Roeblingianum, a pretty light blotched form of O. cordatum, &c. At the back of the group were several light and dark forms of Lælia purpurata, some fine forms of Masdevallia Veitchiana and Harryana, which, together with the beautiful Cochlioda Nœtzliana, brightened up the group, which also contained Cattleya Skinneri alba, some good C. Mendelii, &c.

The second prize went to E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), for a fine group, in which Cattleyas and Lælias were conspicuous, including C. luteola Rœzlii, a fine C. Schilleriana, a fine series of C. Mossiæ and C. Mendelii, a splendid C. Schröderæ alba (First-class

Certificate), a fine series of Lælia purpurata varieties, &c. It also contained some good forms of Miltonia vexillaria, a fine series of Masdevallias, some good forms of Odontoglossum crispum, a very fine O. × Wilckeanum, O. Hallii, the rare Cœlogyne asperata, &c.

For a group of ten specimen Orchids, E. Ashworth, Esq., took the first prize, the most prominent examples being Masdevallia Harryana, some forms of Cattleya Mossiæ, and two plants of Lælia purpurata Russelliana. A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Lofthouse) obtained the second prize for a very good lot, mostly Cattleyas and Lælias, comprising dark and light forms of L. purpurata, a fine C. Mossiæ, the handsome Lælio-cattleya × Canhamiana Iolanthe, and others.

For the best group of Cypripediums, E. Ashworth, Esq., took the first prize, his collection containing about fifty varieties, and among them C. × Harrisianum superbum, C. Chamberlainianum, &c.

For a collection of Cattleyas and Lælias, T. Statter, Esq., Stand Hall, Whitefield (gr. Mr. Johnson) obtained the first prize with a fine series of L. purpurata, some good C. Mossiæ, C. M. Reineckeana, C. Mendelii, &c. The second prize went to Mr. J. Cypher, Cheltenham, for a very good group.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), received First-class Certificates for Cypripedium Godefroyæ leucochilum, C. × Chapmanii, and a form of C. × J. Gurney Fowler called Rhemba.

Mr. Briggs Bury, Bank House, Accrington (gr. Mr. Wilkinson), sent a fine Lælio-cattleya × Canhamiana Iolanthe, with four splendid flowers.

In the Nurserymen's class the first prize for the best miscellaneous collection went to Mr. James Cypher, whose group contained a splendid series of Lælia purpurata and Cattleya Mossiæ varieties, together with Dendrobium Bensonæ, Oncidium concolor, and various other Orchids, which were arranged in a most effective manner.

Mr. J. Robson, Bowdon, took the second prize, his group including some fine Cattleya Mossiæ and Lælia purpurata, a splendid L. tenebrosa, a beautiful white Odontoglossum crispum, &c.

The Society's Large Gold Medal was awarded to three splendid groups exhibited, not for competition, by Messrs. Charlesworth & Co., Heaton, Bradford, Messrs. Hugh Low & Co., Clapton, and Messrs. F. Sander & Co., St. Albans.

Among the noteworthy plants in Messrs. Charlesworth's group were Lælio-cattleya × Canhamiana Lady Wigan, Cypripedium × Gowerianum magnificum, Lælia purpurata Backhouseana with flamed segments, and representatives of most of the showy species which flower at this season.

Messrs. Low's group contained a fine series of Cattleya Mossiæ forms, some well-cultivated Dendrobium Dearei, Cymbidium eburneo-Lowianum,

well-flowered Cypripedium Curtisii, and a good miscellaneous collection.

Noteworthy in Messrs. Sander's group were Cattleya × O'Brieniana, Cypripedium × E. Holt (Curtisii × præstans), a superb form of Lælio-cattleya × Aphrodite, called Queen Empress, to which a First-class Certificate was given, and L.-c. × Canhamiana var. Aylingii. The group also contained representatives of most of the usual showy species.

Messrs. B. S. Williams & Son, Upper Holloway, received a Gold Medal for an effective group, including Sobralia macrantha, Oncidium Marshallianum, Odontoglossum Pescatorei, O. Lehmanni, and others, various Cypripediums, Cattleyas, and other showy things.

Messrs. John Cowan & Co., Garston, Liverpool, also received a Gold Medal for a good group, including some showy Cattleyas and Lælias, Odontoglossums, Cypripedium Mastersianum, and other good things.

Messrs. W. L. Lewis & Co., Southgate, received a Small Gold Medal for a good group containing a fine Cattleya × Hardyana and other showy Cattleyas, Cypripedium Stonei, a seedling from C. concolor crossed with C. villosum, Oncidium varicosum Rogersii, Odontoglossum × Andersonianum, and others.

Messrs. James Backhouse & Son, York, included a number of fine Orchids in a collection of miscellaneous plants, to which a Large Gold Medal was given; the pretty rose-coloured Sobralia × Amesiana being one of the most noteworthy.

Mr. A. J. Keeling, Bradford, also sent a small group of choice Orchids.

## MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

THE second meeting of this Society was held at the Coal Exchange, Manchester, on June 3rd, and brought together a number of choice exhibits. Some re-arrangement has been made in the officers of the Society, W. Thompson, Esq., Walton Grange, Stone, now being Chairman; G. Shorland Ball, Esq., Ashford, Wilmslow, Vice-Chairman; and E. J. Sidebotham, Esq., Erlesdene, Bowden, Cheshire, Hon. Treasurer.

W. G. Groves, Esq., Alderley Edge (gr. Mr. Robertshaw), sent a well-grown plant of Dendrobium Lowii (First-class Certificate), Miltonia spectabilis radiata (First-class Certificate), and a fine Dendrobium Falconeri (Award of Merit).

Captain Law-Schofield, Rawtenstall (gr. Mr. Schill), sent a very fine Dendrobium Bensonæ album (First-class Certificate).

D. B. Rappart, Esq., Liscard, Cheshire, sent a handsome Cattleya Mossiæ Rappartiana (First-class Certificate).

J. Leemann, Esq., West Bank House, Heaton Mersey (gr. Mr. Edge), sent Lælia purpurata Leemannii—a good form with dark lip (Award of Merit).

R. Wigfull, Esq., Ashgrove, Sheffield (gr. Mr. Lucas), sent a good form of Odontoglossum crispum.

Messrs. F. Sander and Co., St. Albans, sent Sobralia macrantha alba (First-class Certificate), Bulbophyllum barbigerum (Botanical Certificate), and the following four, all of which received Awards of Merit: Lælio-Cattleya × elegans Novelty, L.-c. × D. S. Brown, L.-c. × Fire Queen (parentage unrecorded), and Cypripedium × Gertrude Hollington illustre—rather more spotted than the original form.

Messrs. Hugh Low and Co., Clapton, exhibited the following five varieties of Cattleya Mossiæ, each of them receiving an Award of Merit: Admiral Bradshaw, E. Ashworth, gloriosa, magnifica, and Mrs. E. Ashworth.

Messrs. Linden, Brussels, sent a fine Odontoglossum called O. radiatum Prince of Wales (Award of Merit), Cattleya Mossiæ, &c.

At the meeting held on June 17th a number of choice Orchids were exhibited, though the awards were rather less numerous than at the previous one.

Captain Law-Schofield exhibited Cypripedium × Chapmanii (Award of Merit) and C. × C. magnificum (First-class Certificate).

W. Thompson, Esq., exhibited a good Cattleya Mossiæ Wageneri with two flowers (First-class Certificate), and Odontoglossum × Coradinei Roeblingianum (Award of Merit).

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Lofthouse) sent Lælia tenebrosa nigrescens, a fine form with very dark lip (First-class Certificate), and cut flowers of Lælia purpurata grandis, white with large richly-coloured lip (Award of Merit).

S. Gratrix, Esq., West Point, Whalley Range (gr. Mr. McLeod), sent Lælio-cattleya Aphrodite Queen Empress (First-class Certificate).

H. Greenwood, Esq., Highfield (gr. Mr. Spurr), sent a good plant of Cypripedium philippinense with about a dozen flowers (Award of Merit).

Arthur Blackburn, Esq., sent a well-flowered plant of Cattleya Mossiæ and a hybrid Cypripedium.

Messrs. F. Sander & Co. sent the following four Orchids, each receiving an Award of Merit:—Cattleya Mossiæ rubens, a very richly-coloured form; C. M. Empress of India, a large form with richly-coloured lip; Grammatophyllum Measuresianum, and Phaius × Owenianus.

Messrs. John Cowan & Co., Garston, Liverpool, sent a group of various showy Orchids, and received a Vote of Thanks.

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THE meeting of the Royal Horticultural Society, held at the Drill Hall, James Street, Westminster, on June 15th, was the first after the great Temple Show, and, as usual, at this meeting, the display of Orchids was a small one, though it included several very interesting things, and eight awards of various kinds were made.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent a small group of choice things, including the handsome Vanda × Miss Joaquim, now flowering for the first time in Europe, to which a First-class Certificate was given. The plant was between seven and eight feet high, and carried an inflorescence with nine buds and three expanded flowers, the latter being rose-coloured, with an orange disc to the lip. Its history is given at page 245 of our first volume. Botanical Certificates were given to Geodorum Augusti and the rare Aëranthus carpophorus, Rchb. f., and a Cultural Commendation to a very pretty, well-flowered plant of Cirrhopetalum nutans. Dendrobium crystallinum, Lælio-cattleya × Euterpe, and a fine inflorescence of Phalænopsis amabilis was also shown.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke) received an Award of Merit for Odontoglossum crispum Crawshayanum, a fine, heavily blotched form, whose flowers were hardly expanded.

Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. Young), sent several fine things, including Epidendrum Medusæ with eight flowers, the rare Cymbidium tigrinum, a fine form of Lælio-cattleya × Canhamiana, with another handsome Lælio-cattleya of unrecorded parentage, Cattleya Mendelii, a beautiful form of C. Mossiæ, Miltonia vexillaria candida, and a rosy form of M. spectabilis.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), sent a fine dark form of Lælia tenebrosa, a pretty light variety of L. purpurata, and a singular form of Miltonia vexillaria, in which each segment bears some purple lines, something like those on the lip.

Frau Ida Brandt, Riesbach, Zurich (gr. Mr. Schlecht), sent the interesting Pescatorea cerina, Odontoglossum maculatum, and others.

H. Druce, Esq., The Beeches, Circus Road, St. John's Wood (gr. Mr. Walker), sent a pretty hybrid Cypripedium, derived from C. niveum × bellatulum, resembling C. Godefroyæ.

H. J. Elwes, Esq., Colesborne Park, Andoversford (gr. Mr. Lane), sent a pretty form of Disa × kewensis (D. × Veitchii × tripetaloides), with lighter coloured flowers than the original form.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Aldous), sent a blush-white form of Anguloa uniflora.

P. B. Tubbs, Esq., Annandale, Woodside Park, N. Finchley, sent a good Odontoglossum crispum and Cattleya Warneri with abnormal flowers.

Messrs. James Veitch & Sons, Royal Exotic Nurseries, Chelsea, staged a very fine group, to which a Silver Flora Medal was given. It contained some good forms of Lælia purpurata and tenebrosa, L. × Novelty, some fine Cattleya Mendelii and C. Mossiæ, C. Walkeriana, C. × calummata, Lælio-cattleya × eximia, L.-c. × Hippolyta, two good forms of L.-c. × Canhamiana, Disa × Veitchii, Dendrobium Bensonæ and D. Phalænopsis, the striking *Zygocolax* × Veitchii, Bletia verecunda, Epiphronitis × Veitchii, Cypripedium superbiens, a fine form of C. × Measuresiæ, derived from C. bellatulum ♀ and C. superbiens ♂, and thus the reverse cross of the original form, Selenipedium × grande, &c.

Messrs. Hugh Low & Co., Upper Clapton, exhibited several fine forms of Cattleya Mossiæ, including C. M. Wageneri, C. M. Reineckeana, also a very large and brilliantly-coloured variety called, "In Memoriam Richard Curnow," which received an Award of Merit. Lælio-cattleya × Aphrodite, Lælia tenebrosa, and other interesting things were also sent.

Messrs. F. Sander & Co., St. Albans, received an Award of Merit for a beautiful Lælio-cattleya called Empress of India, derived from L. purpurata Brysiana × C. Dowiana, and thus a variety of L.-c. × tyntesfieldense. They also sent another fine Lælio-cattleya of unreeorded parentage, and a large and richly-coloured form of Cattleya Mossiæ.

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At the meeting held on June 29th Orchids were exhibited in small numbers, the principal feature being a very fine group staged by Messrs. James Veitch and Sons, which is recorded in detail below.

T. B. Haywood, Esq., Woodhatch, Reigate (gr. Mr. Salter), again sent two splendid spikes of Miltonia vexillaria Daisy Haywood, a most beautiful pure white form, with a yellow mark at the base of the lip, which organ measured three inches across. A Cultural Commendation was awarded.

Mr. N. Blandford, Bitterne, Southampton, sent a fine Cattleya Warscewiczii, characterised by the absence of the usual yellow blotches on the disc of the lip, and thus comparable with the variety saturata.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), sent a small group of very interesting plants, comprising Lælio-cattleya × Arnoldiana magnifica, a very richly-coloured form, the handsome L.-c. × Hippolyta, Cattleya Mossiæ Wageneri, and C. M. Hardyæ, an allied white form, differing in having a tinge of lilac in front of the lip, Lælia tenebrosa Charlesworthii, a very dark and richly-coloured form, and three plants of Miltonia vexillaria superba.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), showed a plant called Cypripedium leucochilum grandiflorum,

most resembling C. bellatulum, but with an entirely white lip. He also sent C. × Salus, a hybrid with greenish yellow flowers tinged with purple, apparently partly derived from C. concolor.

The Rev. F. Paynter, Stoke Hill, Guildford, sent a pretty hybrid Phaius, derived from P. Humblotii and P. bicolor, the sepals and petals yellow tinged with red, and the lip dull rose with some orange lines at the base.

Messrs. James Veitch and Sons, Chelsea, staged a very fine group, to which a Silver Flora Medal was given. It comprised the brightly-coloured Phalænopsis × Luedde-violacea, P. × intermedia var. Vesta, Disa × Veitchii, Spathoglottis × aureo-Vieillardii, with flowers bright yellow on opening, afterwards becoming cream-colour, the segments dotted with purple and the lip purple at the apex; the fine Dendrobium × illustre, D. × porphyrogastrum, some fine pans of Dendrobium Phalænopsis, D. Bensonæ, the richly-coloured D. glomeratum, a fine pan of Stenoglottis longifolia, Epidendrum nemorale, Sobralia macrantha, the handsome S. × Veitchii, some good specimens of Phaius Humblotii, Anguloa Ruckeri and A. uniflora, the rare Aëranthes grandiflorus, Cypripedium superbiens with two dozen flowers, Aërides multiflorum Lobbii, some fine forms of Lælia tenebrosa, Cattleya Mossiæ and C. Mendelii, Lælio-cattleya × eximia, L.-c. × Canhamiana, &c. A First-class Certificate was awarded to Lælio-cattleya × Eudora superba (Lælia purpurata ♀ × Cattleya Mendelii ♂), a superb form of L.-c. × Aphrodite, with blush-white, finely shaped flowers, and a rich purple-crimson front lobe to the lip.

Messrs. Hugh Low and Co., Upper Clapton, staged a handsome group, chiefly composed of fine forms of Cattleya Mossiæ, and including C. M. Reineckeana, C. M. Wageneri, C. M. Bronze Queen, a richly-coloured form, in which the orange of the lip was unusually developed, and of a bronzy tint, &c. They also exhibited Cypripedium × Mrs. E. V. Low, a very pretty hybrid of unrecorded parentage, to which an Award of Merit was given. It is evidently a C. niveum cross, the flowers being medium-sized, white, with the petals and dorsal sepal lightly spotted with purple.

Messrs. F. Sander and Co., St. Albans, exhibited a number of interesting Orchids, including Lycaste leucantha, a large green-flowered species of the gigantea group, Dendrobium infundibulum and D. speciosissimum, Cattleya Schilleriana, Aërides expansum, forms of Odontoglossum Harryanum, the handsome Sobralia × Amesiana and S. × Veitchii, Stenoglottis longifolia, Calanthe Sanderiana, Miltonia vexillaria and Cypripedium × E. Holt.

Mr. H. A. Tracy, Twickenham, sent flowers of five good forms of Cattleya Mendelii.

## CURIOUS CROSSES.

I HAVE read with interest the notes on Curious crosses in the last number of the *Orchid Review* (page 179), and think it may be interesting to record that I have a Sophronitis grandiflora crossed with Phalænopsis Schilleriana. The cross was made last February, and the plant is now bearing a splendid pod, 1½ inches in girth.

JAMES HORNER.

Whitby.

## ORCHID PORTRAITS.

CATTLEYA MOSSIÆ VAR. MONDII.—*Orch. Alb.*, t. 528.

CATTLEYA SCHILLERIANA, Rchb. f.—*Orch. Alb.*, t. 525.

CATTLEYA QUEEN-EMPRESS.—*Gard. Chron.*, June 12, pp. 378, 384, fig. 139. A variety of Cattleya Mossiæ.

CYMBIDIUM LOWIANUM VIRIDE. — *Orch. Alb.*, t. 527. This is C. Lowianum concolor, Rolfe.

CYPRIPEDIUM × CHAPMANI MAGNIFICUM.—*Gard. Chron.*, June 5, p. 365, fig. 134.

CYPRIPEDIUM CILIOLARE.—*Gard. Chron.*, May 29, p. 348, fig. 121. A fine specimen with fifteen flowers, shown by Baron Sir H. Schröder at the Temple Show.

CYPRIPEDIUM × PALATINUM.—*Wien Ill. Gart. Zeit.*, April, p. 115, fig. 1.

LÆLIA × LINDLEYANA, Rchb. f.—*Orch. Alb.*, t. 526.

LÆLIA LONGIPES, Rchb. f.—*Bot. Mag.*, t. 7541.

LÆLIO-CATTLEYA × PALLAS.—*Rev. Hort. Belge*, June, pp. 130, 131, fig. 22.

ODONTOGLOSSUM CRISPUM VAR. QUEEN VICTORIA. — *Gard. Chron.*, June 12, pp. 379, 384, fig. 140.

ODONTOGLOSSUM CRISPUM VAR. STARLIGHT.—*Gard. Chron.*, June 5, p. 363, fig. 133.

RENANTHERA STORIEI, Rchb. f.—*Bot. Mag.*, t. 7537.

TREVORIA CHLORIS, Lehm.—*Gard. Chron.*, May 29, p. 345, Suppl., fig. 128.

VANDA × MISS JOAQUIM.—*Gard. Chron.*, June 26, p. 427, fig. 165.

## CORRESPONDENCE, &c.

T. L. M., Florida. 3, Epidendrum odoratissimum. 4, E. graniticum. 6, E. nemorale. 5. Dendrobium gratiosissimum.

H. J. R., Florence. Phaius Henryi is a white form of P. Humbiotii.

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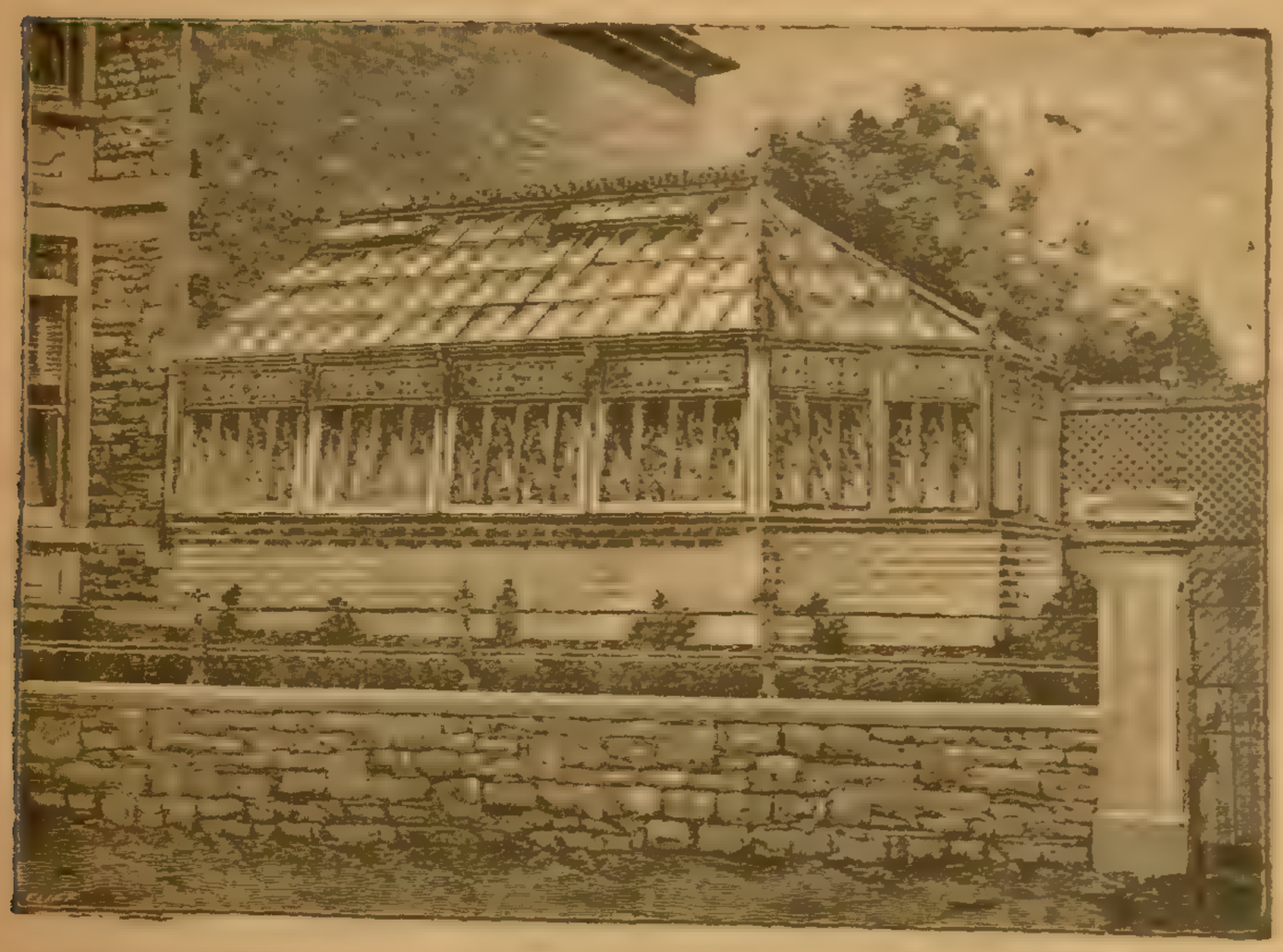

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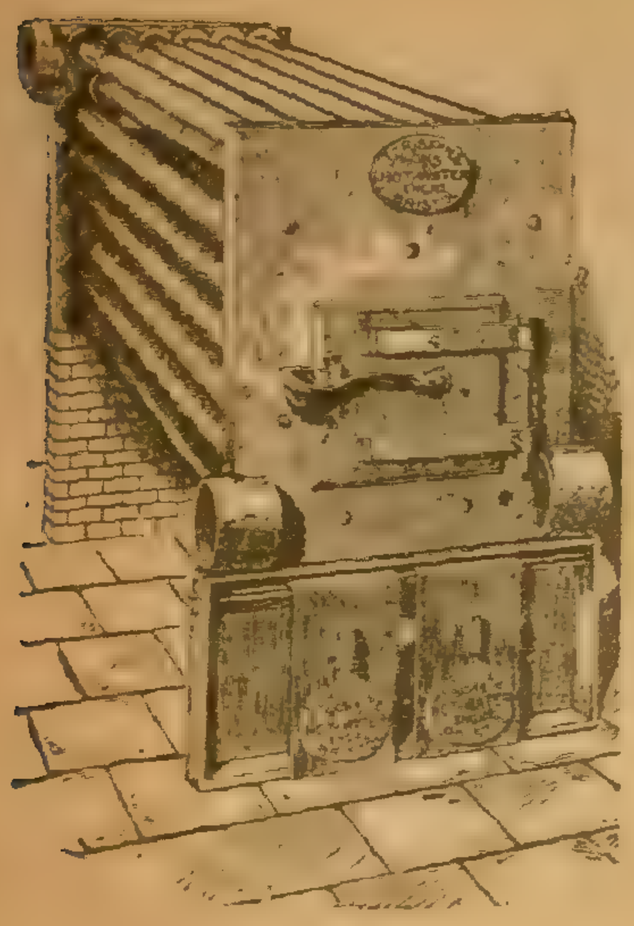

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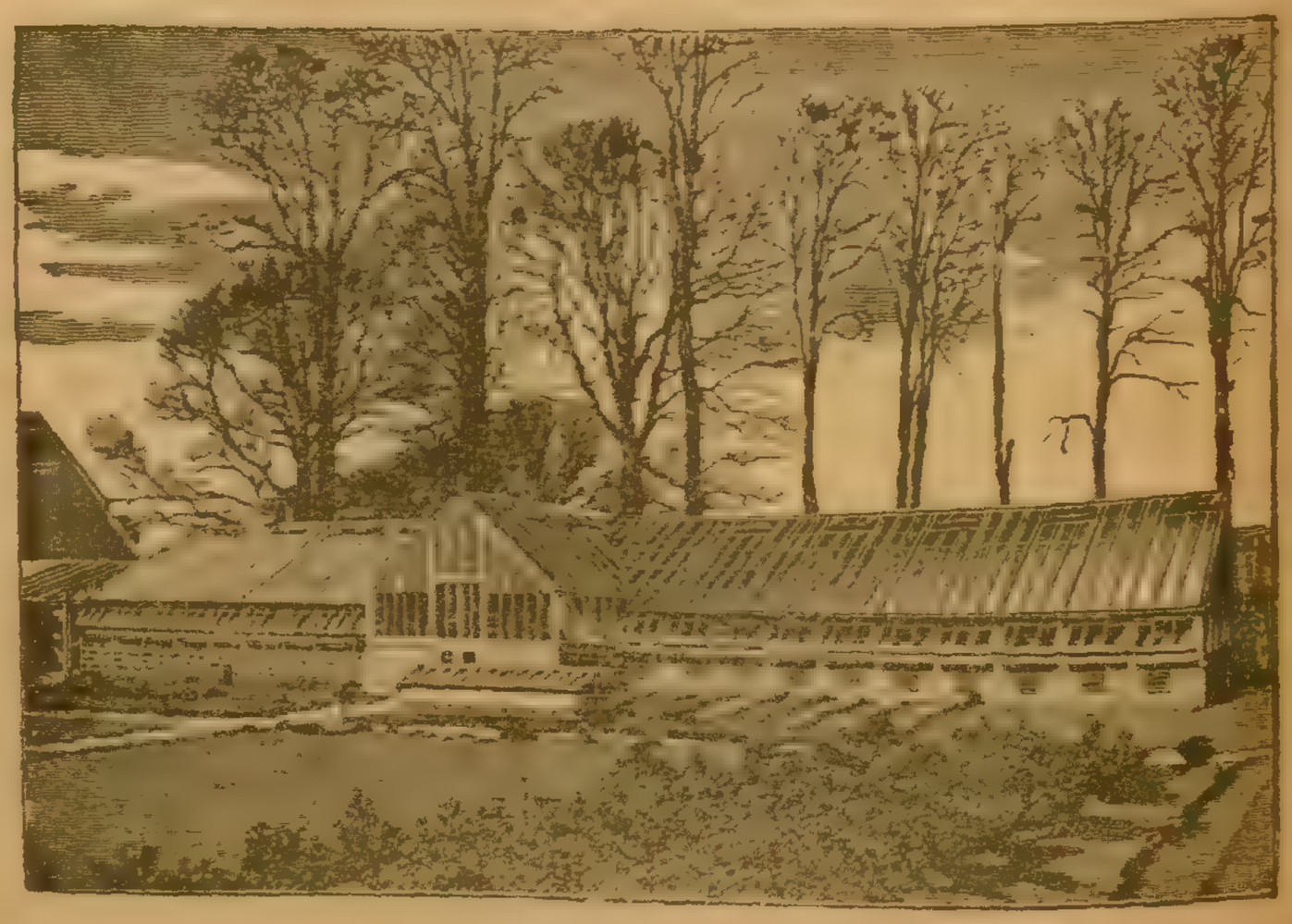

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# THE ORCHID REVIEW:

## An Illustrated Monthly Journal,

## *DEVOTED TO ORCHIDOLOGY.*

Contents.


| | PAGE | | PAGE |
|---|---|---|---|
| Books, Notices of ... ... ... | 236 | Dies Orchidianæ ... ... ... | 226 |
| Hansen, *The Orchid Hybrids* ... | 239 | Hybridist ... ... ... ... | 232 |
| Kraenzlin, *Orchidacearum Genera et Species* ... ... ... ... | 239 | Epilælia radico-purpurata ... ... | 232 |
| Calendar of Operations for August ... | 247 | Manchester and North of England Orchid Society ... ... ... | 252 |
| **Cattleya, Chemical composition of ...** | **233** | **Notes ... ... ... ... ...** | **225** |
| Cattleya, Degeneration of ... .. | 232 | Orchid, A new British... ... ... | 234 |
| **Cattleya × undulata ... ... ...** | **254** | **Orchid Portraits ... ... ...** | **256** |
| **Cattleya, Value of a white ... ...** | **251** | **Orchids at Langley ... ... ...** | **229** |
| Correspondence, &c. ... ... ... | 256 | Orchids at The Dell, Egham ... ... | 227 |
| Curious Cypripedium seedlings ... | 242 | Orchids at the Royal Horticultural Society ... ... ... ... | 255 |
| Cypripedium bellatulum, Culture of ... | 236 | Orchids in the Law Courts ... ... | 251 |
| Cypripedium × Vipani var. Corningii Fig. 11) ... ... ... ... | **241** | **Value of a white Cattleya ... ...** | **251** |
| Dendrobium Beetle ... ... ... | 230 | Varieties—Are they constant? ... | 245 |


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VOL. V.] *AUGUST*, 1897. [No. 56.

## NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during August, on the 10th and 24th respectively, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The August meetings of the Manchester and North of England Orchid Society are fixed for the 12th and 26th, at the Coal Exchange, Market Place, Manchester. The Orchid Committee meets at noon, and the exhibits are open from one o'clock until four.

Two beautiful forms of Cattleya Warscewiczii are sent from the collection of Mrs. Taylor-Whitehead, Burton Closes, Bakewell (gr. Mr. Dunn). One is fairly typical in character, except that the lip is unusually broad and round, the two small yellow eyes standing out very clearly from the very deep purple-crimson area. The other is of the usual shape, but the eyes are much larger, and shade off to nearly white within the margin, while the front lobe is much paler in colour. They have flowered annually for the last four years.

A very fine, slightly-spotted form of Odontoglossum apterum has been sent from the collection of J. Wilson Potter, Esq., of Croydon, the petals of one flower being an inch broad. The flowers are white, with a few minute brown spots on the lower part, those on the lip only approaching those of the typical form, from which it is very distinct. Flowers of Aëranthes grandiflora, Vanda Kimballiana, Cattleya Harrisoniana, and two or three forms of the variable Dendrobium Phalænopsis are also enclosed.

A flower of Cypripedium Victoria-Mariæ from the collection of J. H. Collett, Esq., Guy's Cliff, Wotton, Gloucester, has two staminodes, the usual one, and a second which replaces one of the anthers, the other being fertile, as usual. Another flower on the spike is normal.

The Catalogue of Dr. Jessop's collection of Orchids has been sent by Messrs. John Cowan & Co., who are distributing the collection. It contains over 1,200 plants and many fine varieties. Messrs. Cowan are opening their Gateacre Nurseries for the sale of Orchids with this fine collection.

It is interesting to record that the plant of Grammatophyllum speciosum in the collection Sir Trevor Lawrence, Bart., Burford, Dorking, is throwing up three flower spikes, making, we believe, the third time that the plant has flowered in England.

## DIES ORCHIDIANÆ.

LOOKING over my last copy of the *Review* I came across the article on the "Destructive collection of Orchids" (page 204), with suggestions as to means by which the wanton mischief described might be checked. Such wholesale destruction ought to be checked, but until the Government of Venezuela sees fit to intervene there seems little hope of improvement. But what interested me most was the account of how a number of seedling Cattleyas and Oncidium Papilio were rescued by the writer and affixed to young trees in his garden, where they have grown and flourished without the slightest care. I hope he will have some good flowers next season, and let us hear more about them. I wish they would grow on the trees in my garden. How easy it would if one only had to tie them on to the branches, give water when necessary, and fight the cockroaches and other insects, which seem to be as fond of them as the grower himself, though in another sense. One would probably find time for hybridising, and might raise new crosses or increase the stock of some of the valuable hybrids which have appeared in Europe, but still remain rare. Perhaps the writer will let us know of any success which he may attain in this direction.

---

Last month (page 196) I alluded to the new blue Jubilee Orchid as one which we should probably hear of again, and my remarks have come true sooner than I anticipated. It has appeared at the meetings, both at London and Manchester, and this is how it is reported :—At the former we read that E. Ashworth, Esq., sent "a flower of the new Dendrobium Victoria Regina, which, if only a botanical plant, is decidedly of the blue tint represented by the collector, and, when established, will be pretty enough" (*Gard. Chron.*,

July 17, p. 42). At Manchester we learn that "Mr. Statter also showed the new Dendrobium Victoria Reginæ, with a few flowers upon it, receiving an Award of Merit, which is quite as much as it is worth, for when the novelty wears off a batch of the common nobile will be as much or more prized. The colour of the limbs and the lip is half white and half coerulean blue, smallish in size, and not remarknble in substance. It lacks the influence of some of the choicer East Indian Dendrobes to place it in the front rank. Like all these other side of the world species, with its nodes and wiry-like stems, the plant may possess longevity" (*l. c.*, July 24, p. 58). This, we will suppose, marks another stage in the history of the plant.

---

The nomenclature question has come to the front rather prominently during recent years, and as a good deal of advice has been given upon the subject perhaps the following may be added to the collection. In the Report of the Manchester Orchid Society's meeting on July 15th we read that among the more prominent of Messrs. Charlesworth's exhibits was "a crossbred between Cypripedium Boxallii and C. œnanthum superbum called Ranjitsinhji (this is a little too much, Mr. Charlesworth—keep to Christian names)"—*Gard. Chron.*, July 24, p. 58. The new name may be a little too much—indeed I should call the plant a form of C. × rubescens, which appeared about four years ago, but surely the writer does not intend his advice to be taken seriously.

---

I think, however, that long and difficult names should be avoided as far as possible, at all events while short and easy ones can be found. There is the magnificent Cattleya named in honour of the Polish collector Warscewicz, who discovered it, and so many other Orchids, and yet in gardens it generally goes under its much latter name of C. gigas, which is probably due more to the difficulty of spelling and pronouncing the original name than to anything else—and yet it is the correct one, and therefore ought tc be used. And this reminds me that Cattleya Mossiæ Wageneri is very frequently spelt without the first e, which is incorrect, as the plant was named after the collector Wagener, who discovered it. This is rather a digression, but it seems to me that a better recognition of utility would prevent many of our troubles in nomenclature.

ARGUS.

## ORCHIDS AT THE DELL, EGHAM.

THE rich collection of Baron Sir Henry Schröder, at The Dell, Egham, will repay inspection at any season, for choice and handsome Orchids follow each other in succession throughout the year. At the present time Cattleya

Rex is making a fine display, eight plants being in flower and others following on. The best spike noticed carried five flowers. Several plants of C. Warscewiczii were also out, one beautifully mottled form bearing three spikes and an aggregate of ten flowers. The beautiful Lælio-cattleya × Baroness Schröder bore two fine flowers, and it is interesting to note that this hybrid grows and flowers twice a year. Other fine things noted were L.-c. × Timora, L.-c. × callistoglsssa, Lælia xanthina, Cattleya Eldorado, Gaskelliana, and C. × calummata. It is very interesting to note the vigorous root action of many of the plants, which shows how well they are looked after. In one case a bundle of roots at least a yard long was tied to a stick attached to the basket as a support. Such roots are encouraged in every possible way, and are probably of more use to the plant than the few which remain in the compost.

A minute black beetle, about the size of a pin's head, which eats the growing points of the roots, has been found rather troublesome to keep in check here, and it would be interesting to know more about this insect. It is not the well-known Cattleya-fly, with black shining body, which has also been seen here, as at so many other places, and as it hides in the compost fumigation is useless, while its minute size and its habit of falling at the slightest touch makes hand-picking very difficult. By the way, it has been noticed that the fly which makes round galls on Cattleya roots is a distinct species, with yellow body and white wings, and it is evident that Orchid growers have several distinct insect enemies to guard against.

Of interesting Odontoglossums in flower were several fine O. Harryanum, the true old O. odoratum, and O. ramosissimum, while throwing up spikes we noted the richly coloured O. × Wilckeanum Godefroyæ, O. Wallisii, and O. Edwardii. Among Oncidiums we noted the handsome O. spilopterum in flower, while the rare O. loxense, O. aurosum, O. incurvum and its variety album were throwing up strong spikes. The best plant of O. incurvum had no less than twenty spikes. Ornithidium coccineum was flowering well, and is a very remarkable as well as pretty plant, for it has two kinds of growth, one an ordinary pseudobulb, the other a leafy flowering shoot, and the latter on the plant in question has produced a succession of flowers for the last four or five years. The beautiful Dendrobium Phalænopsis has commenced to flower, and succeeding plants will keep up the succession throughout the autumn. D. Dearei, D. ciliatum, and D. secundum were also in flower, together with Cynoches chlorochilon, some fine Vanda teres and V. suavis, Promenæa xanthina, Epidendrum × dellense and cinnabarimum, Maxillaria venusta, Masdevallia racemosa, Lælia monophylla, Trichopilia fragrans, Sobralia xantholeuca, the handsome Cypripedium × Massaianum with three-flowered spike, and a number of other fine things. The handsome Mormodes luxatum bore a very fine spike of unexpanded

flowers, and Sophrolælia × Veitchii was throwing up a spike. It is curious to note how much more vigorous a grower this is than the little Sophrocattleya × Batemaniana beside it.

Several useful cultural hints may be worth recording. For example, Epidendrum vitellinum thrives in the Masdevallia house, where it has been grown for six years. A small house largely devoted to the culture of Cœlogyne cristata and its varieties is found to be just the place for the beautiful Trichopilia coccinea, while Odontoglossum grande flourishes on shelves at the back, near the glass. A peculiarity about the pretty little Spathoglottis plicata Micholitzii is that the flowers are self-fertilising, and the pods ripen in a few weeks, while the seedlings come up like the proverbial mustard and cress. It was obtained in 1894, and already there are seedlings in various stages, some getting quite strong. In fact they seem to come up almost anywhere, and hybridists might take a note of the fact. Arachnanthe Cathcartii is a fine plant on a pillar in the centre of the warm Cypripedium house, and flowers freely at the proper season. Phaius Humblotii was formerly cultivated in the Phalænopsis house, but did not succeed; now it is found to grow freely in a cool stove, where at night, especially, the temperature is much cooler. Odontoglossum coronarium is a fine healthy plant on a raft, and flowers every year. It would be an easy matter to prolong these notes considerably were we to note all the interesting plants in the collection over which Mr. Ballantine so ably presides.

## ORCHIDS AT LANGLEY.

THE establishment of Messrs. James Veitch & Sons, at Langley, near Slough, to which the hybrid Orchids were removed a few years ago, continues to progress, and an additional house has been added, making four which are now filled with hybrid seedlings in all stages of development, from the tiny seedling up to those just on the point of flowering, forming one of the most interesting collections in existence. Of those which have already flowered several interesting ones were noted during a recent visit, including a batch of the charming and very variable Epidendrum × elegantulum, scarcely any two of them exactly alike, the fringed E. × Wallisio-ciliare, E. × O'Brienianum and its variety roseum, Epiphronitis × Veitchii, and a very handsome novelty, Epilælia × radico-purpurata, whose parentage may be inferred from the name, now flowering for the first time. Phalænopsis × Hebe carried a beautiful spike of ten flowers. There were also the handsome Lælio-cattleya × Atalanta, L.-c. × Clonia, L.-c. × Ascania, Masdevallia × Ajax, and its much darker variety superba, M. × Chelsoni, the

handsome Disa × Veitchii, Dendrobium × rhodostoma, Cypripedium × T. B. Haywood, and various others.

Many of the species from which Messrs. Veitch's remarkable hybrids have been derived are also there as a matter of course, and among those noted in flower were Lælia crispa, the rare Masdevallia Barlæana, M. amabilis, M. Veitchiana, Selenipedium Schlimii, Miltonia Roezlii, Epidendrum radicans, etc., and of those from which, so far as we know, hybrids have not appeared, were the handsome Odontoglossum Harryanum, Dendrobium glomeratum, Cœlogyne speciosa, and the remarkable Chondrorhyncha fimbriata. A list of those in fruit could easily be compiled, for Mr. Seden continues his experiments in the old systematic way, but we will only mention capsules of Epidendrum vitellinum, remarkable for their glaucous character, and a batch of Sophronitis grandiflora, which will probably be heard of later on. It has been remarked that as seedlings from this species are usually slow growers it would be better to use it as the pollen parent. But there is the compensating advantage that it crosses very freely, and many of the reverse crosses which have been tried by Mr. Seden have refused to set. Epidendrum radicans, for example, has been crossed with all kinds of things, and has always refused to set a single pod, though as pollen parent it has been used with great success. Mr. Seden should try to fertilise it with its own pollen, just as an experiment, for we know that capsules are produced in a wild state. It can scarcely be that there is a constitutional weakness about the particular individual growth at Langley, and it would be interesting to have the experience of others with this species. Many more interesting details could be written, but the facts will doubtless come out in due time, as the numerous seedlings reach the flowering stage.

## THE DENDROBIUM BEETLE.

SOME information respecting the Dendrobium Beetle was given at pages 136 and 164 of our last volume, and it would appear that more than one species has been introduced into our collections. A very interesting article is given by Mr. R. Stewart MacDougall, M.A., B.Sc., in the *Gardeners' Chronicle* for July 24th (pp. 48, 49, figs. 11-16), whence the following notes are condensed.

In December, 1896, the author was asked to visit the Orchid house of a large grower in Midlothian, where the Orchids were being ruined by some agency or other, and on examination many of the pseudobulbs were found to be tunnelled by the larvæ of a longicorn beetle. Later on the beetles were bred out from these larvæ at the Royal Botanic Garden, Edinburgh, and proved to be, as suspected, Diaxenes dendrobii (Gahan). The life history of the pest is now being worked out there, and as the experiments

prove that the beetle will, and does, breed in our Orchid houses, which has previously been doubted, a preliminary note is published, warning those interested in Orchid cultivation to be on their guard.

Diaxenes dendrobii is a pretty brownish-grey beetle from ½ to ⅝-inch long, with long antennæ, and with whitish or yellowish lines along its upper surface. The grub, which lies inside the pseudobulb, is whitish and legless (but still very active), with scaly brown head and biting jaws. When full fed it makes a cocoon out of the fibres of the hollowed-out pseudobulb, from which cocoon, after pupation, the beetle emerges. It is injurious, both as imago and as larva. The grub mines into and tunnels out the pseudobulbs till, it may be, merely the outer skin is left, while the beetles feed on pseudobulb, and leaf, and root.

The pest has been introduced in Orchids imported from Burma, and in March last larvæ were found at the Edinburgh Botanic Garden in some freshly-imported Dendrobium nobile, which had been bought at a sale in London, and these larvæ have now reached the beetle stage. As other plants have doubtless been distributed over the country a careful outlook should be kept. The beetles should be killed whenever found, but careful looking is necessary, for, feeding chiefly by night and resting by day (often at the base of the plant), they escape notice, and as, in addition, they are protectively coloured, great difficulty is experienced in picking them out until the eye gets accustomed to them. Its presence, however, may be detected by its work. The infected pseudobulbs can be detected by the withered appearance, and, to begin with, by the blackish or brownish discolouration of one side, which marks the progress of the enclosed grub, which, of course, should be cut out and destroyed. Squeezing the pseudobulbs a little between the fingers, too, is useful, as affected bulbs lack the firmness of sound ones.

"From what I have seen," the author concludes, "I have no hesitation in describing Diaxenes dendrobii as the very worst of Orchid pests, and should it once get a footing in an Orchid house there is much discouragement and disappointment in store for the owner or cultivator. Diaxenes dendrobii takes its name from its infecting the genus Dendrobium, but I am sorry I have to add that the beetle seems willingly to feed upon almost any Orchid with marked pseudobulbs. In my experiments, Dendrobium, Cœlogyne, Cattleya, and Lælia have all been attacked, and at present I have a brood of my own rearing in Lælia anceps. As I am desirous not only to get a complete knowledge of the spread of Diaxenes in Britain, but also to make my report, when issued, as helpful as possible, I will be much obliged if anybody who has had experience of the beetle or its work will communicate with me here. I need hardly add that any information thus received which might prove helpful will be fully acknowledged."

## THE HYBRIDIST.

### EPILÆLIA × RADICO-PURPURATA.

THIS very interesting and beautiful generic hybrid has just flowered with Messrs. James Veitch and Sons, by whom it was exhibited at the Royal Horticultural Society's meeting on July 27th, gaining a First-class Certificate. It was obtained by Mr. Seden by crossing Lælia purpurata with the pollen of Epidendrum radicans, and the seed was sown in September, 1892, so that the plant has reached the flowering stage in a little under five years. The combination of characters is very curious, as the plant has entirely the habit of the pollen parent, though dwarfed to (at present) 15 inches high, with an inflorescence of three flowers, which have also the general shape and adnate column of the Epidendrum parent, but they are enlarged to three inches in diameter. The sepals and petals are of that light flame-colour known as Indian yellow, and the lip is nearly entire and broadly ovate, with a bright-yellow, three-keeled disc, and a very broad reddish-purple margin. The influence of the mother plant is seen in the dwarfed habit, the nearly entire lip with broad purple margin, and in the modified colour. The plant appears to have a vigorous constitution, and will probably prove a great horticultural acquisition.

## THE DEGENERATION OF CATTLEYAS.

IT is a well-known fact that many Orchids which grow and flower luxuriantly for some time after importation afterwards gradually fall away, becoming smaller by degrees, ultimately dying outright. The cause of this degeneration has long been a puzzle to Orchid growers, and various theories have been put forward to account for it, and various remedies tried, though only with partial success. Starting from the standpoint that these plants are grown for their flowers, and that flowering is an exhaustive process, Messrs. Alex. Hébert and G. Truffaut have been conducting a series of experiments, by chemical analysis, with a view of discovering the cause of this degeneration, and a possible remedy (*Comptes Rendus*, June 8th, p. 1311). The species experimented with was the old Cattleya labiata, which they point out is an epiphyte with monophyllous pseudobulbs, producing every autumn an inflorescence of several flowers, yet is grown in a mixture of polypodium fibre and sphagnum moss, containing very little nutriment. This degeneration is not due to physical causes, because we reproduce in our houses the natural conditions under which the plant grows, but probably to defective alimentation.

The method adopted was that of analysing plants of this Cattleya when imported in 1891, and others after six years' culture, in 1897, at the end of the period of degeneration. The results are given in comparative tables, from which we see that the latter has less dry material, organic matter, potash, lime, magnesia, phosphoric acid, and nitrogen, with an increase in the amount of water, sulphuric acid, and two or three other matters, some of which were only present as traces in the imported plants. They then analysed the flowers and found them to contain very similar elements to those which had diminished in the cultivated plants, showing that the degeneration is largely attributable to the exhaustion caused by the production of flowers, without any means being taken to compensate the plants for the loss. The conclusions which they arrive at is that, in order to counteract this degeneration, Cattleyas should receive a mixture of suitable manures, containing nitrogen, phosphoric acid, potash, lime, and magnesia.

We may take these indications as conclusive, and the question now for us is, as practical men, how may these elements be most successfully applied?

## CHEMICAL COMPOSITION OF CATTLEYA.

Two papers, prepared by Mr. Smee, were laid before the Scientific Committee of the Royal Horticultural Society, on July 13th, by Mr. Veitch, to whom they had been addressed as Chairman of the Orchid Committee. The first contained some figures connected with the composition of the atmosphere; analyses of old and young pseudobulbs were also given: and of the flower, including observations upon the colouring matters of plants. Professor A. Church, having given careful consideration to the first of the two papers, reserving the second for a future meeting, remarked that Mr. Smee had scarcely paid sufficient attention to the more recent analyses of the atmosphere and of rain; the amount of $CO_2$ in the free air over land and sea being now found to be almost absolutely uniform everywhere (except where locally contaminated), and less in quantity than three parts in 10,000, so that no conclusions could be drawn from the data furnished in the paper on this point. With regard to the amount of ammonia in the air, it is so infinitesimally small in quantity that it can only be estimated by the most modern and refined chemical operations, so that he was obliged to express some hesitation in accepting Mr. Smee's statements on this point. With regard to Mr. Smee's analysis of pseudobulbs and of flowers, Prof. Church said that they agreed fairly well with average results hitherto obtained from terrestrial and epiphytic plants, but he thought that the percentage of undermined ash constituents—viz., about one half, was far too great, and he questioned the presence of aluminium, observing that though

terrestrial species of Lycopodium contain much of this metal, epiphytic species of the same genus contain none. He felt sure that some ingredient was wanting which had not been determined. With regard to floral colouring matters, Mr. Smee did not appear to have consulted recent researches. Prof. Church had proved that a number of reds, blues, and purples, though called by different names—*e.g.*, colein in the coleus, erythrophyll in copper beech, fruits, &c., œnolin in black grapes and anthocyanin were absolutely the same thing, being represented by the formula $C_{20}$, $H_{20}$, $O_{10}$. These became purplish in neutral cells, blue in alkaline, and red in acid cells. Even the blue-green of a certain Ixia was due to an alkaline solution of the same substance. With regard to the beetroot, however, and plants allied to it, as the Amaranthus and buckwheat, he found that the red-purple was of a different nature, and he had called it "amaranthin." It gave neither a scarlet nor blue re-action, neither green nor yellow with acids, but Prof. Church has as yet not determined its actual chemical composition, although he had found it to differ from anthocyanin by its insolubility in absolute alcohol, and by the absence from its spectrum of definite absorption bands. With regard to nutritive solutions, Prof. Church thought that the ordinary solutions for plant culture containing phosphates and salts of lime should be used for Orchids, not the solution surcharged with nitrogen compounds recommended by Mr. Smee. He would suggest spraying with "pulverised" solutions the epiphytal Orchids, for he had proved with Escheverias—as Boussingault had also long ago with other plants—that salts, if moist, could be absorbed by the surface of the leaf, so that when a lithium salt was placed upon a lower leaf it was detected in others above. Dr. McNab had previously proved the transmission of lithium salts imbibed by the roots throughout the plant, following the suggestion of Prof. Church to use this salt. Mr. Veitch and Dr. Masters called attention to the practice carried out by amateur Orchid growers of scattering fragments of carbonate of ammonia (smelling salts) so that the vapour might be absorbed. Mr. Henslow suggested that it might be absorbed with the aid of vapour of water, as he had found by experiments that this can be absorbed by leaves ("Transpiration in a Saturated Atmosphere," *Journ. Linn. Soc., Bot.*, XXIII., p. 303).

## A NEW BRITISH ORCHID.

A MOST interesting addition to the British Flora has been made by Mr. Arthur Reid, M.A., F.G.S., of Trinity College, Glenalmond, Perth, namely, a natural hybrid between Orchis maculata and Habenaria bifolia—a plant which, so far as I am aware, has only once previously been recorded,

namely, near Paris. Through the kindness of Mr. Arthur Bennett, of Croydon, I have been able to examine the specimen, the question submitted being whether it was a hybrid or not. A letter from Mr. Reid states that it was found on a large moor, which every year about the beginning of July is carpeted with a profuse growth of Habenaria bifolia and Orchis maculata, with patches of Gymnadenïa conopsea and Orchis latifolia, and he has never found any other Orchid there, though Habenaria albida grows near at hand, but not on the moor. The moor is 600 feet above sea level, and a mile north of the College. For the last thirteen years Mr. Reid has, early in July, collected hampers of the flowers to send to sick children, &c., in London, and it was when thus engaged with his wife and some friends on July 2nd that he was much struck by one specimen among a great company of O. maculata and H. bifolia. It had all the pose of a butterfly Orchid, and the inflorescence at a distance looked most like that species, being rather lax and not at all pyramidal in form, yet its leaves were spotted, and the lip and spur of the O. maculata type. "I have seen O. maculata," he adds, "in all its Protean forms, but have never seen it assume this particular pose, so I thought it worth while to get 'counsel's opinion' on the subject. It looks like a hybrid between the two. I am keeping the root to plant, but it is three-lobed, and of the O. maculata type." The above explains well the general aspect of the plant, and the circumstances under which it was found, and it presents such an unmistakable combination of the characters of the two species as to leave no doubt of its hybrid origin and parentage. Careful comparison of flowers of the three side by side show that in the general shape of the flower, the three-lobed lip, and the short spur it closely approaches O. maculata, though the flower is rather larger, and the colour is greenish white, as in the other parent—not lilac, and not spotted, as in O. maculata.

The French hybrid alluded to was discovered in 1891, on a turfy moor at Loing, in the Department of Loiret, France, and was named Orchis × Chevallieriana, Camus (*Bull. Soc. Bot. Fr.*, XXXVIII., p. 157), which was afterwards changed to Orchiplatanthera × Chevallieriana, Camus (*Journ. de Bot.*, 1892, p. 474), to indicate its being a generic hybrid. That also had palmately-lobed bulbs, and flowers most resembling Orchis maculata, but the leaves were like those of the other parent, and the spur intermediate in character. It was named after the Abbé Chevallier, one of the party who discovered it. The discovery of a form of the same hybrid in Great Britain —for the plant found by Mr. Reid is clearly a form of the same—is a very interesting matter. How far the two differ can only be seen when they can be compared together. It is probable that other individuals will be found where the two parents grow intermixed.

R. A. Rolfe.

## CULTURE OF CYPRIPEDIUM BELLATULUM.

With reference to the query at page 197, regarding the culture of Cypripedium bellatulum and allied species, I may say that my plants are successfully grown in sandy clay with lumps of old mortar. The plants are very roughly potted, so that the drainage is very rapid. Seedlings come up freely in the interstices of the potting material, which is purposely left rough for rapid drainage. We grow the plants in the stove, and water freely overhead, without any bad results. By roughly potting this class of Cypripedium in this way, it is possible to see portions of the root, and so note whether healthy root action is going on. If the roots are not growing, from any cause, the only way to do it is to turn the plant out, and treat it as an imported plant. It is quite possible that lumps of peat and mortar would suit equally well used in the above manner, but the less sphagnum moss the better.

E. S. Berkeley.

Stoneham Park,
Southampton.

## NOTICES OF BOOKS.

*Orchidaccarum Genera et Species.* Exposuit F. Kraenzlin. Vol. I., Fasc. 1. Mayer and Müller, Berlin, 1897.

The first part of a work bearing the above title has just reached us, and contains the following brief introduction :—

"The following sheets are the 1st part of Vol. I. of Orchidacearum Genera Et Species exposuit Fr. Kraenzlin, containing the Cypripedieæ and the Ophrydeæ. Vol. II. contains the Dendrobieæ and the Bolbophyllineæ, Vol. III. the Monopodials. The distribution of the remaining groupes among the Vols. IV. to VI. cannot be fixed with absolute certainty.

"The work will be published in parts at the price of 60 Pf. per sheet of 16 pages for subscribers to the whole work, and at 70 Pf. per sheet for subscribers to single volumes. After the completion of each volume its price will be raised. Single parts are not sold."

A revision of this large and important natural order is certainly much wanted, and a work of this kind, if concise and at the same time exhaustive, would be invaluable; how far the present attempt is likely to fulfil these conditions may be inferred from an examination of the first instalment now before us. It consists of 64 pages, and contains 67 species, and as the number of species now known is estimated to exceed five thousand, exclusive of synonyms, the six volumes should contain at least 800 pages each.

The descriptions are in Latin, with copious notes in German, and the usual references to descriptions, figures, and geographical distribution. The work commences with the tribe Apostasieæ—the preliminary heading "Diandræ" not being explained—and is chiefly based on Mr. Rolfe's revision, published in the *Journal of the Linnean Society* in 1888, though the same author's more recent paper, at pages 327 and 363 of our last volume are not mentioned. In the same way the figure of Neuwiedia veratrifolia (*Hook. Ic. Pl.* t. 1987) is completely overlooked, but a reference to these papers would have prevented the suppression of N. Lindleyi as a species. Conversely, the inclusion of Tupistra singapureana as a synomym of N. Curtisii might surely have been omitted, in spite of Ridley's remark about the identity of the two, and the fruit being "a succulent scarlet berry, looking at first sight like the fruit of a Dracæna." It is easy to see that this fruit does not belong to an Orchid, and no evidence is yet adduced to show that it is not a Liliaceous plant, belonging to the genus Tupistra, as hitherto supposed. The remark that Neuwiedia singapureana should be the proper name of this plant requires no further comment. N. Curtisii and N. Zollingeri, in the Key, are separated from the other species by the two characters "Racemus capitatus—Fructus carnosuli," but the former is as certainly as the latter is presumably erroneous. Coming to the genus Apostasia we find A. Lobbii inserted in its wrong place in the Key, and A. latifolia altogether omitted, though it is included in the enumeration. The character given of the former is erroneous, and the note need not have been written, as a reference to the only published figure—which, however, is not cited—would have shown.

The tribe Cypripedieæ we find reduced to the single genus Cypripedium (the omission of all reference to Mr. Rolfe's paper on the Cypripedium group has already been mentioned) of which six sections are recognised, namely, Calceolaria, Selenipedium, Lorifolia, Caudata, Barbata, Concoloria, and Insignia. The two former are equivalent to Cypripedium and Selenipedium as limited in the paper just mentioned, and Lorifolia would be equivalent to Phragmipedium if the species Boissierianum, Czerwiakowianum, caricinum and caudatum, were not taken away from their allies and united (or mixed !) with Stonei, Parishii, philippinense, Rœbelenii, Sanderianum, and Rothschildianum, to form a new and purely artificial section Caudata. Klotzschianum, which would be looked for here, is omitted, except for a casual remark in the note under caricinum. This in turn is followed by new complications, for Elliottianum (a mere synonym of Rothschildianum) Lowii, Haynaldianum and glanduliferum, which unquestionably belong to the same group as Parishii and philippinense, are turned over into the set with tessellated leaves, here called Barbata, which, however, includes C. dilectum, a mere synonym of C. Boxallii, a member of the group Insignia,—

which, together with Concoloria, awaits a future part. The latter group can scarcely give any trouble, but the remark that Insignia only contains one species with marmorate leaves, namely C. venustum, shows that this group has not altogether escaped, for C. venustum certainly belongs to the Barbata group. C. Chamberlainianum and C. Victoria-Mariæ are presumably reserved for the Insignia, but are more nearly allied to C. Parishii than to any member of the latter group.

It would be very easy to carry these criticisms much further, and ask how it is that C. fasciolatum, and its near ally C. macranthum, have wandered into separate groups, while room can be found with the latter for such a different plant as C. humile? And if for this why not for other allied diphyllous species? Why is C. humile preferred to the older name C. acaule? What has become of C. Reginæ and C. album, both older names of C. spectabile? Why are not C. thibeticum and C. himalaicum more worthy of recognition than C. Thunbergii? And, assuming that a natural arrangement is aimed at, how is it that such very closely allied species as C. superbiens, Curtisii and C. ciliolare can be separated by such distinct ones as C. Dayanum, Mastersianum, and others, or why Curtisii and dilectum should be sandwiched in between C. Mastersianum and its near ally C. Hookeræ? The fact is many species are placed right away from their nearest allies.

The references are no happier. Take the very first in the book:—"Apostasieæ R. Br. 1830 Wall. Pl. Asiat. rar. I. 74; Lindley 1833; Endlicher Genera (1837) 220; Meissner (1842) Genera 387."; and then compare "Cypripedium Schlimii Batem. Bot. Mag. t. 5614.—Selmipedium Schlimii Rchb. f. Bonplandia II. 277.—Pescatorea t. 34.—Xenia Orch. t. 44. Flores des Serres t. 1917. de Puydt Orchidéet t. 12." with "Cypripedium debile Rchb. f. Xenia Vot. II. 333. Cypriped. cardiophyllum Franchet et Savat. II, 251; So môku dusets XVIII letzte Tafel." Where are the stops? What is the system? And whatever can some of it mean? We find "Journ. Linn. Soc. XXV.," "Vol. XXV," "25," "Vol. 25," "Bd. 25," and actually "35" and "48," all referring to the self-same volume, with the further variations "Vol. 25 (1888)" and "XXV (1890)"; besides which the page given is wrong in four cases, and the figures are omitted under four of the species, though included in two others. "Lindl. Genera u Sp." and "Lindl. Orch." (with other variations) refer to the same work. Barton Fl. N. Amer. is given as "Paxt. Fl. Gard." and Blume Coll. Archip. Ind. more than once as "Blume Flora Javæ," a quite different work. The checking of a few references soon revealed a number of errors, and several examples occur in the above citations, and further examples of the careless way in which the proofs have been read may be seen in "Mesodatylus" and "Mecodactylus" for Mesodactylus, a word three times

attempted, only once successfully. The story of Cypripedium Curtisii being artificially raised by crossing C. ciliolare with the pollen of C. superbiens is told, but the author, while giving the two references correctly, changes the pollen parent to "C. Dayanum." The idea of the Bornean C. nigritum being a natural hybrid between C. barbatum from Malacca and C. purpuratum from Hong Kong is absurd, and the note about its not being alive in Europe remarkable after the history of the plant given at page 79 of the last volume of this work. But enough has been said to indicate the nature of the work, and space forbids us to proceed further.

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*The Orchid Hybrids.* By GEORGE HANSEN. Second Supplement. G. Hansen, Berkeley, California.

A second supplement to the above work has now appeared—the first formed pages 247-257 of the work itself, and only differed in being printed on one side of the paper, so that those who cared to have the book interleaved could cut it up and paste the slips down opposite their respective pages. The second supplement, "recording knowledge gained about Orchid Hybrids in the period from October 15, 1895, to April 1, 1897," carries the work up to page 334, and is arranged upon the same plan, so that many of the remarks made at page 8 of our last volume apply to the present addition, the chief alterations noticed being a rearrangement of the synonymy in some cases. The work, as before, seems to be very thoroughly done, almost too much so in some cases, for example (page 264):—"Catlælia × Ino. Who knows record of such supposed Ctl.?" The use of such a record we fail to see, for there is not the slightest indication that the name has been previously published, and one is left to assume that in some way Mr. Hansen has heard of such a "supposed" name. The old question of Catlælia confronts one on the very first page, and we must again point out that the proper name for hybrids between Lælia and Cattleya is Lælio-cattleya, a name which has been accepted and used for years, and that such names as Catlælia × Darwiniana, × Elsteadensis, &c., have no existence outside Mr. Hansen's book, where they are created apparently for the purpose of being knocked on the head, being there enumerated as "synonyms." Lælio-cattleya × Darwiniana, × Elsteadensis, &c., we know, but they find no place in the work. Or take "Catlælia × Ghislainiæ (Ll. harpophylla ♀ × Ct. amethystoglossa). Imschoot, Gand. sown '89, one plant only. First Ctl. raised in Belgium. O. R., Feb. '96, p. 39." This is apparently a concise history of the plant, but on turning to the page cited we find the name to be Lælio-cattleya × Ghislainiæ. And this is the erroneous way in which all forms of this hybrid genus are treated. The same remarks apply to Epileya and

Epicattleya, Phalanthe and Phaio-calanthe, Sophroleya and Sophro-cattleya, and, lastly, *Zygolax* and *Zygocolax*, in all of which the author supersedes the original genus by a name of his own, yet citing the original reference to his own new name, leaving the unfortunate reader to find out the blunder as best he may, not to mention the wholesale addition of useless synonyms. The author again indulges in some new generic names, Epiphaius and Phabletia, which simply indicate that apparent crosses have been effected between Phaius and Epidendrum and between Phaius and Bletia. One would have thought that his previous creation of Odopetalum, to commemorate the fact that seedlings raised "between *Zygopetalum Mackayi* and several Odontoglossa have turned out be simple *Zyg. Mackayi*," would have furnished an awful warning against such perpetrations; instead of which we now find (p. 329):—"Odopetalum × Heathii (*Zgp. Mackayi* × Od. species?) G. Ch., Dec. 19, '96, p. 766, col. a, &c.," which, judging by the record, seems equally visionary. In view of the fact that some half-dozen other remarkable generic crosses have recently been recorded in the *Review*, it seems necessary to point out to Mr. Hansen that the creation of new genera in this fashion is altogether unwarranted. It is only when such crosses flower, and one is able to judge whether a *bona fide* cross has been effected that such names should be given. To experiment is one thing, but to attain success is a very different matter, and even the production of seedlings is not always proof that a cross has been effected, as we have already seen, and we strongly advise the author to conform to the usual practice in these cases.

Records under Cypripedium cover forty pages, or rather more than half the work, though some of them are of little value, for example:—"Cypripedium × Eucharis. Also raised, apparently from foot-note O. R., Jan., '97, p. 32, by W. J. R., Maghull," but on turning up the reference we only find this to be a possible determination of a flower sent for name. It seems rather a pity that the author does not confine himself to definite records. A plea in favour of completeness cannot be urged, for the only record under C. Charlesworthii is a single cross, with C. insigne, "under raising with Berkeley, Southampton," but others have been recorded, and probably no Cypripedium has been so generally used by hybridists since its introduction. The authority for C. virens, we may also point out, is **Rchb. f., not Rolfe, as given at page 283.**

We hope that neither the author nor our readers will mistake the object of these remarks, for we can appreciate fully the utility of a concise record of the scattered information on the subject, and the amount of pains taken in getting it together, and in conclusion we would remark that it forms a most useful addition to the author's previous work on the subject.

## CYPRIPEDIUM × VIPANI VAR. CORNINGII.

THE photograph here reproduced represents a beautiful and very interesting hybrid now in the collection of J. E. Rothwell, Esq., Brookline, Mass., U. S. A. (gr. Mr. Nutch), which has been sent to us by Mr. E. A. Orpet, with the information that it was raised in the collection of the Hon. Erastus Corning, at Albany, New York, by his gardener, Mr. William Grey, who named it C. × Corningii. The history of the plant was thus given by the raiser in a letter to Mr. G. Hansen (*Orch. Hyb.*, p. 71):—"In 1892, feeling Pickwickian, I fertilised Cypripedium barbatum pulcherrimum with one anther of niveum, one of Spicerianum, and one of insigne Chantini (which would have given, respectively, × Tautzianum, × Eyermanianum,

Fig. 11.—CYPRIPEDIUM × VIPANI VAR. CORNINGII.

and × Ashburtoniæ). The three anthers were placed on the stigma in a few seconds. I have nine nice plants, two very strong growers with leaves mottled like Aylingii (which is from ciliolare × niveum, but longer, and twice the width. The others look all Spicerianum stock." Mr. Orpet now states that the present plant is the only existing one, and that the leaves have the thickness of C. Rœbelenii, and are very slightly tessellated, and the flower pure white with bright red spots. So much for the history of the plant; now comes the question of its identity.

Had we received this photograph, without the above record, with the request for its name and parentage, we should almost unhesitatingly have

replied: a form of C. × Vipani, derived from C. philippinense and C. niveum, and probably few of our readers who have seen that plant would object to the determination. But how to reconcile this with the above record is the question, for we fail to find the slightest trace of either C. insigne or Spicerianum in the hybrid, and the remark applies equally well to barbatum, the reputed seed bearer. C. niveum, however, is largely represented, and we can only account for the resemblance to C. philippinense in the markings, the shape of the dorsal sepal, petals (including the twist), lip, and staminode by supposing that species to have been the other parent. It is too distinct from C. × Tautzianum for us to suggest that it may be a hybrid between C. barbatum and C. niveum. A comparison with a figure of the original C. × Vipani (*Journ. of Hort.*, 1892, XXIV., pp. 420, 421, fig. 73), however, shows the present one to be sufficiently distinct to merit a varietal name, as above suggested. A reproduction of a drawing of the entire plant is also enclosed, showing the leaves to be oblong, and slightly tesselated, and the scape rather more than twice as long as the petals, and solitary-flowered. Whatever the real explanation of the matter may be—and future experiments may throw some light on the question—our figure shows that a very pretty little plant has been produced. Those who wish to raise additional seedlings must judge for themselves which of the above crosses is most likely to produced the desired result.

## CURIOUS CYPRIPEDIUM SEEDLINGS.

I SEE at page 170 an account of Mr. Young's curious experience with the cross Cypripedium callosum × C. × microchilum, and as you ask for the experience of others in this connection, I can tell you of Mr. George McWilliams, who is a neighbour of mine, crossing C. Spicerianum with the pollen of C. niveum, and getting all but one of the resulting plants true C. Spicerianum and the other a beautiful hybrid that was a true cross. I cannot at the moment of writing state the name it was exhibited under at the Massachusetts Horticultural Society's Show, but it was awarded a medal, and as the occurrence is authentic, it goes to prove that the influence of C. niveum is weak, not potent enough to impress itself upon all the resulting progeny, but sufficient to impregnate the flower and fill the ovules, the mother parent doing the rest. I trust this note may be of interest, as any data that bears upon this all-absorbing topic of hybridisation is of value, and may some day help us to elucidate some of the complex questions that puzzle us at the present time.

South Lancaster,
Mass., U. S. A.

E. A. ORPET.

The hybrids recorded in the two preceding notes, as well as those previously mentioned in these pages, raise one or two very curious questions. Taking first the case of C. Spicerianum crossed with the pollen of C. niveum, we note that one plant proved to be a true hybrid, yet the other seedlings are said to have been true Spicerianum; and this again raises the question whether after fertilisation of the ovules has been effected by the agency of foreign pollen, the mother plant may not in some cases exert such a preponderating influence as to obliterate all traces of the pollen parent in the offspring. Such an explanation seems necessary to account for the cases of C. callosum ♀ × C. × microchilum ♂ (*supra*, p. 170), C. barbatum ♀ × C. niveum ♂ (III., p. 201) and of *Zygopetalum* Mackayi crossed with various Odontoglossums (II., p. 166) and with Oncidium unguiculatum (V., p. 139), in all of which the influence of the pollen parent was nearly or quite obliterated. An alternative suggestion is that C. Spicerianum may have been partly self-fertilised, which, however, seems improbable, for in such cases foreign pollen seems not to exert any influence. Still more remarkable is the case of C. Godefroyæ ♀ crossed with C. niveum ♂ (*supra* II., p. 227), for it is reported that this cross yielded, from the same capsule, examples of both the parents, also of C. concolor, C. bellatulum, C. leucochilum, and nearly fifty intermediate forms. The question then asked, however,—"Is there not some mistake here?"—still remains unanswered, and one can only wonder whether the experiment was conducted under conditions which precluded all possibility of mistake. If the plants still exist it would be interesting to have them critically compared. And in the case of the one here figured, the question occurs, What has become of the other seedlings from the same capsule, which looked "Spicerianum stock"? We would suggest that these experiments should be repeated, and the results carefully recorded.

On the question of multiple crossses a few words may be said. It is of course easy to apply the pollen of several species to the stigma of a given flower at the same time, but the resulting seedlings are not necessarily multiple hybrids. If each produced pollen tubes the probability is that those of one species would outgrow the others, and even if all developed equally the chances of one ovule being fertilised by more than one species are very slight, though it would be rash to deny the possibility of pollen tubes from two different species reaching the micropyle of the ovule simultaneously. We can only say that evidence of such a phenomenon is not yet to hand—nor indeed, of the production of two distinct hybrids from the same capsule. A few experiments with mixed pollen, using only two well-marked species to begin with, would probably throw some light on this interesting question.—Ed.

## ARE VARIETIES CONSTANT?

I BELIEVE the explanation of Mr. R. B. White's peculiar case of different spotting in two spikes of Odontoglossum crispum on one plant to be as follows:—Suppose a plant has one lead; then the whole plant's system is leading to that one spike, and the consequent spotting of the spotted form is (for our purpose) the normal form of that plant. Now, let that same plant break back or break in double leads from the leading bulb; necessarily there is a division of the plant's system, and one of the two leads will be the stronger, and derive more matter than the other weaker one; hence the spotting of that lead's spike is poorer than the larger one. If Mr. White will carefully note the spotting when the two leads of the plant are equally strong, then I have no doubt there will be a very close approximation of the character of the spots of all the blooms on each spike. I have proved the same circumstance as Mr. White in the following manner:—Having a fine spotted crispum I divided it; when the smaller plant bloomed as an individual its spots were not so large or so numerous as those of its larger sister. In due time the little one will be as good as the other.

Now, in defence of my former letter, I should have said (see *O. R.*, June, 1897, p. 183) that the one flower borne on the plant in question in 1896 was on a *very weak* bulb, in the first season after arrival, in 1895. Needless to say, the plant could not possibly show its true character; it had barely time to awake to its new surroundings. As to the absolute constancy of a spotted variety, it is hardly fair to write till the imported plant has been four or five years well grown after importation, for it is my experience that spotted and unspotted forms improve with the size of the plant, till they are fully-grown adults, and have attained their greatest individual size. In fact, they are like us human beings—they have a time when their powers are greatest. When that time has arrived the flowers are finest. Then comes the "down grade" of life, and here is the explanation where the millions of crispums have gone that have come to Europe. They attained maturity, and ultimately died. Now comes a great question for all of us —*How are we to keep our plants at their best?* Dr. Smee is attacking the discovery of the reply from a scientific chemist's side, and he deserves the thanks of all Orchid growers. There is a rich field for all to follow on in his researches, as it only needs a small grain of common sense to see the difference between the conditions of the primæval Colombian forest home of these plants and the European glass structures into which they are suddenly transferred, after being shorn of all leaves, and tied on sticks in a dark box for two months by way of a change. It is marvellous what an Orchid will suffer and yet live. I contend that we ought, as a theory, to grow them on some such lines as these. Stop them all bloom on the first

bulb. If worth keeping (I am speaking of a collector's "fine varieties" as a connoisseur) when they bloom on the second bulb, cut out the third bulb's spike. When the plant has attained three-quarters of its adult size divide it, and, as a general rule, never let a fine thing bloom two years in succession. Circumstances, of course, will tend to modify this theoretical line. The spike draws out of the plant a large amount of chemical matter for the flowers; does the glass structure of Europe return it to the next bulb as does the forest-home? Undoubtedly not! This re-payment of matter will be the reply to the querial heading of this letter. If we all try to discover the reply which we so much need, some of us may succeed. He who does so will deserve a perpetual memorial by all the other Orchid growers.

De B. Crawshay.

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This question, I think, can be answered in the affirmative by all growers of experience. Of course there are many varieties of Odontoglossum crispum and O. Pescatorei that have constantly varying propensities, those among them, for instance, that are irregularly marked. Many varieties have a spot here on one flower, a spot or two there on another, whilst probably one or two flowers on the same spike are practically clear; and I have noticed that such plants vary considerably from year to year, and it is of little use to place much confidence in them. On the other hand, let us take a beautifully and evenly marked form of O. crispum—I will not include O. Pescatorei in this instance, for evenly marked varieties of this species are extremely rare, and I have never had such a luxury under my charge (a few only can boast of possessing them, and if they had changed their character, it is probable that the fact would have been made public long ere this)—it may be blotched on the lip only, or it may also be heavily marked on the sepals, and sometimes likewise on the petals. In either of the above cases, supposing that each individual flower is alike evenly and decidedly marked, I have no hesitation whatever in saying that I have always found such varieties constant. True, the flowers may be smaller, and the blotches or spots less pronounced and brilliant in some years, but that will be in exact proportion to the healthy condition of the plant.

Exactly the same may be said regarding ill-shaped varieties. It is thought by some persons that a beautifully-formed variety is apt to degenerate, through weakness or bad culture, into a worthless starry form; or, on the other hand, that the latter may, by good culture, be converted into a good variety. All through my long experience I have never known a case in point to occur. It has been said that the albino varieties of Cattleyas are not to be thoroughly relied upon; that they may by chance come more or less rose-coloured. But I venture to say that this is a great

mistake. There are many varieties of Cattleyas *almost* white, and being so, the magic name of *alba* is often added on the labels, under which name the plants pass from one collection to the other, consequently this misconception is so very excusable. We will take for instance C. Trianæ. Very few of these out of the great number so named are really white when seen in flower. Depend upon it, the true, *pure* white forms of this lovely species are still few and far between, and are therefore rare and costly. The same may be remarked of C. Gaskelliana, the true albino forms of which are, I believe, even more scarce and more difficult to obtain than with the first-named species. I have seen very few indeed, but those that I have seen are constant beyond a doubt. Who can say that they have ever seen a C. Mossiæ Wageneri or a C. M. Reineckiana, which are perhaps the most common albinos amongst Cattleya, to flower any other than their original colours?

Regarding the rich and dark coloured varieties of Cattleyas and other Orchids, even including Vanda cœrulea, the colours, so far as my experience goes, are constant. One thing, however, must be borne in mind, which is that the colouring matter does undoubtedly, and quite naturally, too, vary in its intensity. The perfect coloration goes hand in hand with the health and vigour of the plant. Thus a considerable period may possibly elapse, after seeing a certain flower in its most perfect condition, before we again see it in all its most brilliant hues and glory. This is when the plant has, through some reason or another, got into a feeble state of health—a most undesirable state of affairs, of course, but one which we must all admit does occur at times, however hard we fight against it. It is, then, to successful cultivation that we must aim if we wish to obtain the best results. It is this that brings out size and colours, supposing they were formerly there. But cultivation, however successful, will not turn a bad variety into a good one, nor, on the other hand, will bad cultivation ever turn a good variety into a worthless one.

In reference to the Dendrobium Wardianum (page 95), at first sight this strange action would certainly appear to be most puzzling. I have flowered hundreds of D. Wardianum, but never remember a case quite parallel. It may often, however, be observed that one pseudobulb from a plant of many may produce flowers of much inferior quality to the others. This may be that there are two varieties in one pan, or that the particular pseudobulb is stricken with a disease so peculiar to the species. No doubt whatever exists in my mind that the top flowers of Mr. H. J. Elwes's plant were the variety, and that the bottom ones were injured, though probably not perceptibly so, which checked the normal and healthy flow of sap.

H. A. Burberry.

## CALENDAR OF OPERATIONS FOR AUGUST.

By W. H. YOUNG, Clare Lawn, East Sheen.

THE daily routine of the Orchid grower's life during this month will be on a parallel with that of the last, watering, damping, shading, cleaning, &c., almost fully occupying his time, with few breaks in this somewhat monotonous procedure. However, to a person who loves his work life will to him be full of interest, for during the daily rounds of examining his plants the progress of each is noted, and, in many cases, the advancement made from day to day is so evident that one has material facts to support its continuance. In the Cattleya house, for instance, those species that bloom in the autumn, winter, or early spring are developing their growths, and each day the expectant observer will find the ever welcome sheaths appearing, which to him is an almost sure indication that the plant will in due time produce flowers according to its kind. No one knows but the ardent Orchidist what a thrill of pleasure is occasioned by the appearance of a sheath, or other indications of floral production, in a plant from which great things are expected. Of course, the advent of sheaths is not the only pleasure obtainable, for there is the condition of the plants and the progress made since they were potted or top-dressed; and the practical lessons to be learnt from observations made on the above should be stored up for future use.

The usual prevailing climatic conditions of this and the next month are more in accord with those existing where the cool Andine Orchids come from—the hot days and dewy nights being very congenial to the occupants of the Cattleya and Mexican houses, and the cool dewy nights to the inhabitants of the Cool houses, means food and drink, and consequent health and renewed vigour. To give the plants every chance of deriving benefit from the cool and dewy night air, the ventilators should be left open to their fullest extent on the latter houses, and those of the other houses, excepting the Phalænopsis house, should be opened sufficiently to admit a good volume of air at night whenever the outside conditions are favourable for such a procedure. Also, to strengthen and solidify the new growth in bulbs and leaves, the shading may be removed earlier in the afternoon as the season declines, the plants at this end of the season being much better able to withstand strong light and more air than they are at the beginning.

The Dendrobiums will have to be looked over frequently now, so that none remain a day longer in the Warm house than is necessary for the completion of their growths, for a secondary one often starts away which would under ordinary circumstances have a poor chance of attaining any degree of maturity before the dark days of winter set in. This is more especially the case with D. Wardianum, a habit which, to a great extent,

hampers our endeavours after success with this species. The above, with D. crassinode, nobile, crepidatum, crystallinum, the hybrid Ainsworthii, Leechianum, splendidissimum, and other more or less well-known kinds of a similar character, should be gradually inured to a drier and cooler atmosphere, attended with a gradual lessening of the supply of water at the root. D. aureum produces better results when kept in a warm house, though in other respects it should be treated as other deciduous species, varieties, and hybrids; so also should those of the thyrsiflorum section, together with D. Parishii, chrysotoxum, suavissimum, superbum, × rhodostoma, &c. The Australian species, D. speciosum, usually makes its growths at the end of July or beginning of August, and until then very little water at the root is needed. It is a plant that appreciates the full benefit of the sun, and for this and other cogent reasons should be grown with the Mexican Lælias. The less disturbance at the root it has the better it will thrive, so that, excepting when absolutely necessary, plants of the above should not be re-potted. I believe it grows on almost bare rocks in its native habitat, which seems to point to the fact that little potting material is needed for it to root in. Plenty of drainage, and a few good lumps of the best rooting medium should be used, and the operation, when decided upon, should be performed when the new breaks have attained a few inches in length.

The deciduous Calanthes should now be growing and rooting freely, and should not lack a good supply of water, to which occasionally should be added a small proportion of liquid manure, obtained in as clear condition as possible, so that no sediment is left on the surface of the soil to obstruct the air passing through, or misleading one as to its condition. If the plants have done well, and filled their pots with roots, a top dressing may be given them. As plants of Catasetum, Cycnoches, and Mormodes finish up their bulbs, the supply of water at the root should be gradually decreased, when by the time the leaves have fallen off next to none will be required. The "Dove Orchid" flowers this month, but, generally speaking, this event is not always a dead certainty, for even when it is grown well, it does not produce flowers annually. My opinion is that it requires a long and complete rest after it has finished up its bulbs, and even when it is unfolding its large plicate leaves little water is needed until root action takes place. Then it should have a moist, humid atmosphere and a fair amount of sunlight, such as may be obtained where the Dendrobiums are grown, though when spraying the latter it is the wisest plan not to direct any on to the undeveloped leaves of the plants under notice. P. aspersa in its mode of flowering differs from the above, as the flowers are produced on a short semi-pendant scape. The treatment required, however, is identical with that afforded the other.

Coryanthes is a genus of plants the members of which are seldom grown

for long, owing to their being of such a decided "miffy" character, though better results would, I think, be obtained if the plants were subjected to a more equable treatment, rather than giving them a wet and a dry season. With these it is absolutely necessary that the "happy medium" should be hit upon, in order to command success, for without it the plants are sure to fail. They should be planted in baskets, with a large amount of drainage material, and a very small quantity of good fibrous peat, into which, for the sake of appearance, a few heads of sphagnum may be put, otherwise it is a superfluity. The baskets should be hung up in a moist and shady part of the East Indian house, and only watered when the material shows signs of getting too dry. This course of treatment should be followed throughout the year, though, of course, during the winter, if the plants are not growing, a longer interval will intervene between each watering. If, by any chance, water should lodge in the unfolded leaves, it should be removed with the aid of a soft brush or other suitable means, as they are so very susceptible to damp.

Plants of Cœlogyne cristata and its varieties are now growing and rooting freely, and in the case of those that were not potted this season, water may be poured into them almost daily, and all the plants syringed over twice a day. Newly-potted plants will not need such a liberal supply of water, for new material being more retentive of moisture, a too frequent application would sour and sodden it. The new C. Micholitzii has just flowered here, and in its general appearance it resembles C. speciosa, though it has white segments with a chocolate-coloured lip. It also resembles the above in habit, the bulbs, however, being less angular. It is growing in a pan in the usual mixture, and is standing on the stage in the stove, where it receives an abundance of water when growing, but only just sufficient to keep the bulbs firm when at rest. Since the flowering of Lælia purpurata, the plants have been kept on the dry side, for the reasons stated in last month's Calendar, and by this time the growths have attained a length of six or eight inches, and new roots are making their appearance at the base, a condition that calls to our notice the fact that if any re-potting is needed it should be done at once, or, failing that, a little freshening of the surface. The operation of potting these should be performed in the same manner as for the Cattleyas, viz., instead of trying to knock the plants out of the pots the latter should be carefully broken with a hammer, and the pieces to which the roots are adhering should be placed in the new receptacle, which should be filled to within three inches of the top with drainage, and the remaining space filled up with good peat and a small quantity of living moss. Neat stakes should be fixed in the ball, to which some of the bulbs may be tied to keep the plant in a trim and shapely condition. If possible, the above should be fixed in previous to placing the peat to the plant, so as to

obviate the chance of damaging any roots that may be in the way. As a rule, I am very much adverse to pushing stakes into the ball of a plant, as one can never tell what damage is being done beneath, or in the compost, and therefore, as far as is possible, we fix them in when there is a better chance of seeing where they are going to. After the plants have been re-potted, great care and discretion have to be exercised in the watering of them, as the surface will show signs of dryness long before the main portion is anywhere near dry. Consequently, to simply go by the surface appearance would be detrimental to the plant's welfare. When the plants have become established in their new pots, a liberal supply will be needed until the bulbs have filled up. The lovely L. tenebrosa should be treated in exactly the same manner.

In the Cool house Odontoglossum Rossii, Cervantesii, Œrstedii, × Humeanum, and × aspersum, have made considerable progress so far as leaf development is concerned, and as soon as root action is imminent, those that need new receptacles should be seen to. Baskets or shallow perforated pans are the most suited to these, as they are generally hung up, and receptacles of this description are lighter, bulk for bulk, than pots. To remove the plants from the old baskets the corner pins should first be taken out, and then the bars can the more readily be detached from the clinging roots. The utensils should be well drained, and a modicum of peat and moss in equal proportions used for rooting material. For some little time after being disturbed a little water will suffice, but when the plants have recovered from the shock a much larger quantity should be given, excepting in the case of O. Œrstedii, which thrives best under a trifle drier treatment. Towards the end of the month a commencement may be made with O. crispum, selecting only those plants whose growths are sufficiently advanced to warrant the early appearance of roots at the base of the new leads. Reference has already been made concerning the treatment and mode of potting this species and its allies, and the only thing I can urge upon amateurs is, do not deluge the plants with water, but by all means keep the atmosphere moist and pure. It is surprising how dry these plants may be kept without meeting any injury from that cause, providing other conditions are favourable. Of course, dryness with these must not be confounded with the dryness spoken of in connection with Cattleyas or Calanthes when at rest, but accepting the word in its comparative sense one will easily understand the difference. Newly-potted plants appear to become dry almost immediately after they are done, and inexperienced hands are tempted to give water days before it is necessary, the fact of the dryness being merely superficial never entering their minds. At this season of the year the plants may be dewed overhead, thus moistening the dried heads of moss and obviating the chance of water being applied too soon after re-potting. Do

not fumigate these plants for some time after being disturbed, or it may cause them to lose their oldest leaves.

The question of manure for Orchids has never been satisfactorily settled yet, and the little experience I have had with it does not warrant me in offering an opinion on the subject, excepting that I would prefer some one else trying the experiment. It is a fairly general custom to sprinkle the floors and spaces under the stages with liquid farmyard manure, and, given the requisite degree of faith, no doubt a certain amount of benefit accrues from such a practice. For various and obvious reasons this powerful, if not aromatic, liquid should be thrown down at nightfall, when there is least air on the houses, so that if there are any volatile manurial properties evolved, they may not be carried away from the reach of the plants too soon. A mixture in which I have a certain amount of faith is composed of one half slaked lime and one half of fresh new soot, which, when well mixed together, gives off a small quantity of ammonia which contains the much needed nitrogen. This mixture may be scattered about on the ashes under the stages about once a week, or it may be kept in large pots. Good native guano also gives off ammoniacal gases calculated by some to be beneficial to Orchids, and it certainly is one of the safest to use, so long as it is kept out of the water tanks. To apply artificial manures directly to the plants is, to say the least, a very unwise proceeding, and if any must be given, it should always be used in infinitesimal quantities to begin with, dissolved in rain-water. For terrestrial Orchids, the best and safest manure to use is that obtained from the cowsheds and stables mixed, taking the same precaution with this as with the other, and always using it in very limited quantities.

## THE VALUE OF A WHITE ORCHID.—ALLEGED BREACH OF WARRANTY.

ORCHID growers will be interested in an action brought before His Honour, Judge Parry, at the Manchester County Court this morning. Mr. Elijah Ashworth, Harefield Hall, Wilmslow, brought an action against Mr. Matthew Wells, of Sale, for £50 damages with respect of a breach of warranty as to the nature of an Orchid. In June, 1895, the plaintiff purchased from the well-known Bloomfield collection an Orchid, catalogued as "Cattleya Aclandiæ alba, seven bulbs, three leaves, the only known plant." The evidence for the plaintiff, given by experienced cultivators of this rare plant, including Dr. Hodgkinson, Mr. G. S. Ball, solicitor, Mr. James Anderson, Rusholme, Mr. A. J. Keeling, Bradford, Mr. R. Johnson, Stand Hall, Whitefield, was that if the Orchid had been an

"alba," perfectly white and well-shaped, it would have been worth seventy guineas to one hundred and fifty guineas. The plant, however, produced a coloured variety which was only worth eight shillings to ten shillings. Plaintiff, thinking he was getting a bargain, gave twenty guineas for it. Mr. Tweedale, who represented plaintiff, said the action had been brought as a test case. Mr. Newman, who appeared for defendant, contended that the plant was described as a something that never had been, and never would be, and the witnesses present at the sale admitted that they didn't bid for it because they doubted the accuracy of the description. A public auction would, he asserted, afford the best proof of the value of the plant. His Honour said that as they had waited for two years for the plant to bloom, he thought they ought to wait for his decision, and reserved judgment.—*Manchester Evening Mail*, July 28, 1897.

## MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

At the meeting of the above Society held on July 1st, at the Coal Exchange, Manchester, there was a fine display of Orchids, remarkable alike for quality and good culture.

The Chairman, W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), exhibited several sterling plants:—Odontoglossum crispum giganteum, a large, white, well-blotched form, carrying a spike of a dozen flowers (Award of Merit), O. × Coradinei waltonense, with a spike of fifteen flowers, unusually broad in the segments (Award of Merit), Lælia tenebrosa Charlesworthii, a fine form with cinnamon-coloured segments (Award of Merit), a good form of L. purpurata with a dozen flowers, and a cut bloom of a singular form of Cattleya Rex, with greenish white sepals and petals, and saffron-coloured side lobes to the lip, quite distinct from the typical form.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Lofthouse), sent four superb plants:—Lælia tenebrosa Victor Warburton, a beautiful form with pale saffron-coloured sepals and petals, and the lip rich purple in the throat with same purple veins, and a broad white margin (First-class Certificate), Cattleya Mossiæ bellissima, a very beautiful albino near C. M. Wageneri, but with a slight flush of pink in front of the lip (First-class Certificate), another albino, called C. M. Warburtoni (Award of Merit), and C. M. Reineckeana, with six fine flowers (Award of Merit).

T. Statter, Esq., Stand Hall, Whitefield (gr. Mr. Johnson) sent a splendidly-grown Cattleya Warscewiczii, with large flowers and typical,

richly-coloured lip (Award of Merit), and the beautiful Lælio-cattleya × Hippolyta (Award of Merit).

G. Shorland Ball, Esq., Ashford, Alderley Edge (gr. Mr. Hay), sent a fine Cypripedium × Harrisianum superbum (Award of Merit), and C. Curtisii viride.

Walter C. Clarke, Esq., Orleans House, Sefton Park, Liverpool, exhibited the beautiful C. × Lawrebel (Award of Merit), and a finely flowered Cattlea Warscewiczii Sanderiana.

S. Gratrix, Esq., Whalley Range (gr. Mr. McLeod) sent a well-grown Selenipedium × grande atratum with four fine flowers (Award of Merit).

H. Greenwood, Esq., Highfield (gr. Mr. Spurr), exhibited a finely grown plant of Cypripedium Rothschildianum (syn. Elliottianum) with two spikes of three flowers each (Cultural Commendation), and Dendrobium Gouldianum.

W. A. Gent, Esq., Brooklands, exhibited a plant of Lælia Digbyana, bearing one of its remarkable flowers.

D. Gilmour, Esq., Highbury, Sheffield, sent a good form of Cattleya Mossiæ.

Captain Law-Schofield, New Hall Hey, Rawtenstall, sent a fine bloom of Lælio-cattleya × eximia.

Archdeacon Rawstone, Burnley, sent a good form of Cattleya Mossiæ.

Messrs. Hugh Low and Co., Clapton Nursery, exhibited Cypripedium × Mrs. E. V. Low, a seedling from C. niveum and some other parent unknown, though the spotting and shape of the flowers, as well as the character of the leaves, are suggestive of C. insigne (Award of Merit).

Messrs. Charlesworth and Co., Heaton, Bradford, sent Lælio-cattleya × velutino-elegans, a handsome hybrid with four flowers, in which the characters of the two parents are well combined (Award of Merit).

Messrs. John Cowan and Co., Garston, Liverpool, sent a fine Cattleya Warneri, and a fine C. Mossiæ, closely resembling C. M. Wageneri except for a slight flush of pink in the lip.

At the meeting held on July 15th, the exhibits were much fewer in number, though of fine quality.

Captain Law-Schofield, New Hall Hey, Rawtenstall (gr. Mr. Schill), exhibited a very fine Cypripedium Godefroyæ leucochilum, with heavily blotched segments (First-class Certificate), a second variety of the same called aureum, having the ground colour creamy yellow, spotted as in C. Godefroyæ (Award of Merit), and C. × Measuresiæ (C. superbiens ♀ × C. bellatulum ♂), a very pretty hybrid (Award of Merit).

T. Statter, Esq., Stand Hall, Whitefield (gr. Mr. Johnson), showed a plant of the beautiful Cypripedium callosum Sanderæ, with a very fine

flower, the new Dendrobium Victoria-Reginæ, with several rather small white and blue flowers (Award of Merit), and a good Lælio-cattleya × eximia.

D. B. Rappart, Esq., Promenade, Liscard (gr. Mr. Nicholson), exhibited a plant of the pretty and very interesting Cirrhopetalum Collettii, with curiously appendaged dorsal sepal and petals (Botanical Certificate).

E. J. Sidebotham, Esq., Erlesdene, Bowden (gr. Mr. Shiner), sent the pretty light-coloured Selenipedium × Cleola, and a flower of a good form of Cattleya Gaskelliana.

Messrs. Charlesworth & Co., Heaton, Bradford, exhibited a good, finely-coloured hybrid Cypripedium, called C. × Ranjitsinhji (Award of Merit), derived from C. Boxallii and C. × œnanthum superbum, and thus a variety of C. × rubescens, Cattleya granulosa aurea, with four flowers, more yellow in colour than usual (Award of Merit), Brassia Lawrenceana longissima, a form with very long sepals and petals (Award of Merit), and a number of good Masdevallias and Lælio-cattleyas.

W. A. Gent, Esq., Brooklands, exhibited a very good Cattleya Warscewiczii, and a light form of C. Eldorado.

Mr. Allen, of Sale, sent a well-grown Cattleya superba, to which a Cultural Commendation was given.

## CATTLEYA × UNDULATA.

A MOST interesting Cattleya has just flowered in the rich collection of Sir Trevor Lawrence, Bart., Burford, Dorking. It is well known that C. elongata and C. Schilleriana are both natives of Bahia, and the one just mentioned is so precisely intermediate in character as to leave little doubt of its being a natural hybrid between them. The plant most resembles C. Schilleriana in its dwarf habit, but is rather more slender, and the scape also is rather short and bears two flowers. These in size and in the shape, colour, and undulations of the sepals and petals closely resemble C. elongata, while the shape of the lip including the markings of the front lobe are most like C. Schilleriana. The side lobes of the lip are a little longer than the column, completely enfolded round it, the colour being rosy purple, suffused through a whitish ground. The two species in question are so thoroughly distinct, and their characters so well combined in the one now under notice, that I think there can be no doubt as to its origin. It is just such a plant as might be expected to result from crossing the two together, and as it is such a handsome little plant perhaps some of our hybridists will try to obtain it by artificial crossing.

R. A. ROLFE.

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

At the meeting of the Royal Horticultural Society held at the Drill Hall, James' Street, Westminster, on July 13th, Orchids were not numerously represented, though three Awards of Merit were given.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), sent the beautiful albino Cattleya superba alba, C. Eldorado Wallisii, several good forms of C. Warscewiczii, cut examples of Lælio-cattleya × Mardelii, and a flower of Dendrobium Victoria-Reginæ.

Frau Ida Brandt, Brunnenhof, Riesbach, Zurich (gr. Mr. Schlecht), sent cut spikes of Cattleya Warscewiczii, Phaius Humblotii, Phalænopsis violacea, Odontoglossum × Wilckeanum, O. nebulosum, Epidendrum Brassavolæ, E. radiatum, and E. nemorale, the latter a fine form to which an Award of Merit was given.

Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, showed two plants of the handsome Disa × Veitchii, Lælio-cattleya × Zephyra, L.-c. × Eunomia, and L.-c. × Canhmiana albida, the latter a fine form with a flush of pale pink in the sepals and petals, and a richly-coloured lip, to which an Award of Merit was given.

Messrs. F. Sander & Co., St. Albans, sent Cypripedium × orphanum, C. × Euryale, C. × Svend Brunn, C. × mulus, and the handsome Phaius × Ashworthianus, the latter receiving an Award of Merit.

At the meeting held on July 27th, the exhibits were rather more numerous, and included a most interesting and handsome hybrid from Messrs. Veitch, between Lælia purpurata and Epidendrum radicans, to which a First-class Certificate was given.

E. Ashworth, Esq., Harefield Hall, Wilmslow, sent a splendid collection of cut Orchids, to which a Silver Flora Medal was given. It included Lælio-cattleya × Schilleriana, the beautiful Cattleya Rex, Cattleya Mendelii, C.M. delicata, a pretty nearly white form, sixteen fine forms of C. Warscewiczii, mostly dark, but one beautiful light form, called Mrs. E. Ashworth, had blush-white flowers, with a tinge of yellow on the disc of the lip and a small lilac mark in front, and received an Award of Merit.

J. F. Ebner, Esq., Woodlands, Beckenham (gr. Mr. Waite) showed a plant of the handsome Cypripedium × Chapmanii.

Major Joicey, Sunningdale Park (gr. Mr. Thorne) exhibited Odontoglossum aspidorhinum with three spikes, O. Schlieperianum with a similar number, and O. S. citrinum.

J. H. Kitson, Esq., Elmet Hall, Leeds (gr. Mr. Bonsall) sent the handsome Cypripedium Godefroyæ leucochilum.

Frau Ida Brandt, Riesbach, Zurich (gr. Mr. Schlecht) sent cut examples

of Cattleya Rex, Trichocentrum porphyreum, Colax jugosus, Odontoglossum Schlieperianum citrinum, Epidendrum raniferum, E. cochleatum, &c.

Messrs. James Veitch & Sons, Chelsea, exhibited Epilælia × radico-purpurata (Lælia purpurata ♀ × Epidendrum radicans ♂) a most beautiful hybrid, to which a First-class Certificate was given, Sobralia × Veitchii, Phalænopsis × Hebe, Lælio-cattleya × Clonia, Cattleya × Atalanta, and Epidendrum radicans.

Messrs. Hugh Low & Co., Upper Clapton, sent two fine Cattleya Warscewiczii, with five and six flowers respectively, C. Gaskelliana Sunray, a very pretty variety, feathered with purple on the petals and lateral sepals, Cypripedium × œnanthum superbum, C. × Charles Canham, a good Odontoglossum crispum, &c.

Messrs. F. Sander & Co., St. Albans, sent Angræcum Eichlerianum, the handsome Vanda Hookeriana, Bifrenaria aurantiaca, and Masdevallia gargantua.

## ORCHID PORTRAITS.

Calopogon pulchellus.—*Journ. of Hort.*, July 15, p. 45, fig. 8.

Cattleya elongata, Rodr.—*Bot. Mag.*, t. 7543.

Cattleya Mossiæ Rappartiana.—*Gard. Chron.*, July 10, p. 17, fig., Suppl.

Coryanthes Fieldingii, Lindl.—*Gard. Chron.*, July 17, pp. 30, 31, 33, 39, fig. 7, 8, 10.

Cypripedium × Chapmanii magnificum.—*Journ. of Hort.*, July 8, p. 21, fig. 4.

Cypripedium Godefroyæ leucochilum grandiflorum.—*Gard. World*, July 24, p. 745, with fig.

Lissochilus milanjianus, Rendle.—*Bot. Mag.*, t. 7546.

Odontoglossum crispum var. Starlight.—*Journ. of Hort.*, June 10, p. 499, fig. 96.

## CORRESPONDENCE, &c.

J. W. A., West Derby. Epidendrum ochraceum.
F. S., Bruges. Odontoglossum × mulus var. cuspidatum.
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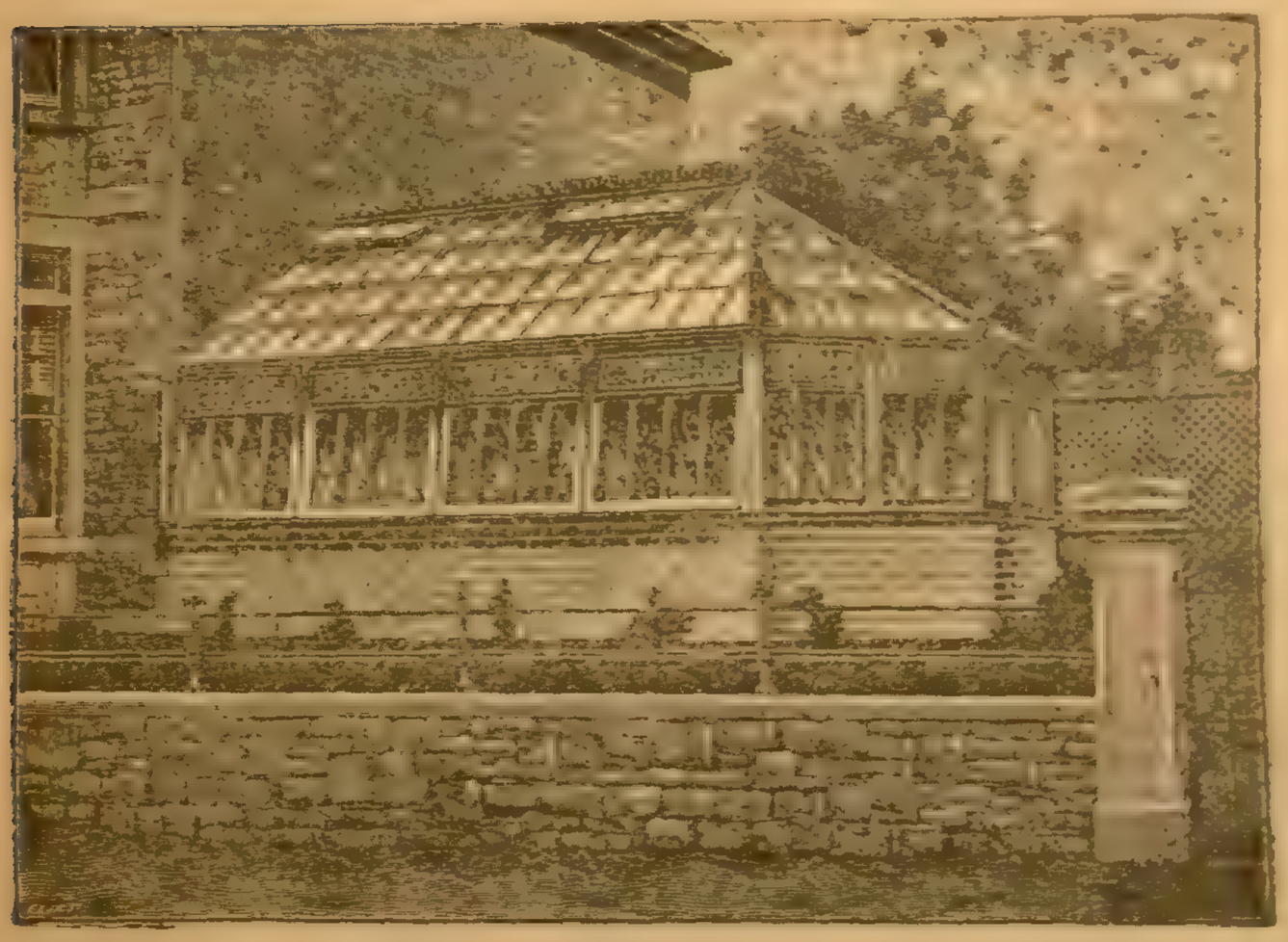

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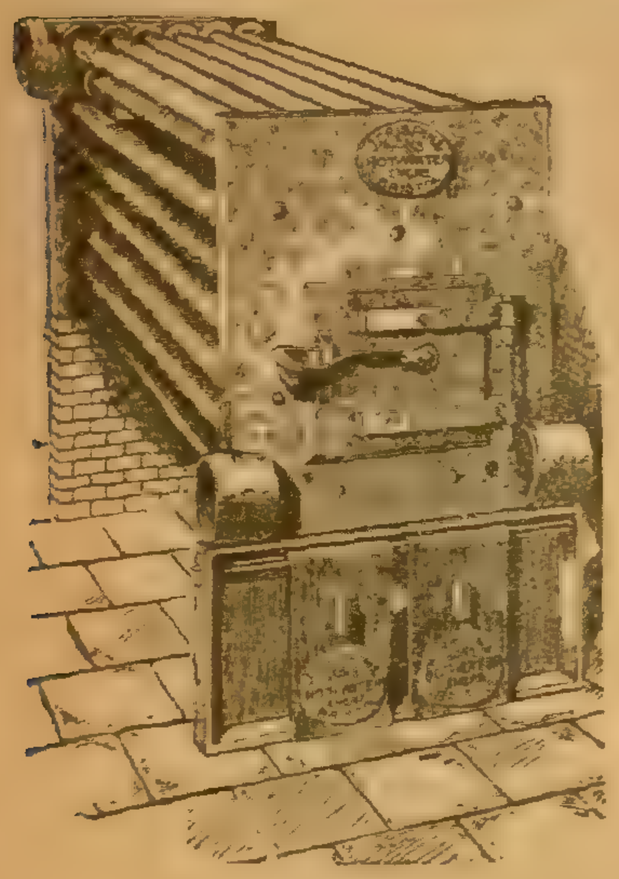

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# THE ORCHID REVIEW:

## An Illustrated Monthly Journal,

## *DEVOTED TO ORCHIDOLOGY.*

### Contents.


| | PAGE |
|---|---|
| An Amateur's Notes ... ... ... | 258 |
| Calendar of Operations for September | 278 |
| Cattleya, Chemical composition of .... | 270 |
| Correspondence, &c. ... ... ... | 288 |
| Cypripedium × siamense ... ... | 288 |
| Dendrobium Victoria-Reginæ ... | 277 |
| Dies Orchidianæ ... ... ... | 259 |
| Epidendrum fulgens ... ... ... | 264 |
| Epidendrum radicans (Fig. 13) | 273, 274 |
| Epilælia × radico-purpurata (Fig. 12) | 273 |
| Grammatophyllum speciosum ... | 268 |
| Hybridist ... ... ... ... | 277 |
| Lælio-cattleya × Robin Measures... | 277 |
| Hybrids, Closely allied ... ... | 275 |
| Manchester and North of England Orchid Society ... ... ... | 283 |
| Notes ... ... ... ... ... | 257 |
| Novelties ... ... ... .. | 267 |
| Cattleya Warscewiczii gigantea ... | 267 |
| Dendrobium cœleste .. .. | 267 |
| Epidendrum Stanhopeanum ... | 267 |
| Eriopsis Helenæ ... ... ... | 267 |
| Orchid Portraits ... ... ... | 288 |
| Orchids at Rosefield, Sevenoaks ... | 265 |
| Orchids at the Royal Horticultural Society ... ... ... ... | 285 |
| Spot in Orchids ... ... ... | 276 |
| Varieties - Are they constant? ... | 262 |


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# THE ORCHID REVIEW.

VOL. V.] *SEPTEMBER*, 1897. [No. 57.

## NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James' Street, Westminster, during September, on the 7th and 21st respectively, when the Orchid Committee will meet at the usual hour, 12 o'clock, noon.

The September meetings of the Manchester and North of England Orchid Society are fixed for the 9th and 23rd, at the Coal Exchange, Market Place, Manchester. The Orchid Committee meets at noon, and the exhibits are open to inspection from one o'clock until four.

A series of handsome Cypripediums are sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, among which C. Curtisii and C. tonsum are very fine, and C. × œnanthum superbum marked by its rich coloration.

A splendid inflorescence of Cypripedium × Youngianum with three flowers and one unopened bud is sent from the collection of Reginald Young, Esq., Sefton Park, Liverpool, together with a flower of C. × Denisianum for comparison. The latter is decidedly inferior in size, but remarkably similar in other respects. C. × selligerum, instead of C. philippinense, is given as one parent of the latter, but the influence of C. barbatum (one parent of C. × selligerum) is not very obvious.

A fine plant of Cœlogyne Sanderiana has just flowered in the collection of H. J. Ross, Esq., of Florence, producing five spikes and making a handsome show. It has taken ten years to bloom.

A flower of a very distinct and beautiful form of Cattleya × Hardyana is sent from the collection of F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey, by Mr. Stafford, which is remarkable for having a broad white band down the centre of each petal, from the base to beyond the middle. It is quite unlike anything we have seen before, and may bear the name of C. × H. var. striata. Five plants of this handsome natural hybrid are showing for flower in the collection, including the original one, which will afford an opportunity of comparing them.

A flower of Dendrobium crystallinum Statterianum is also sent from the same collection, having very bright purple tips to the segments, in which respect alone it differs from the type. It was formerly called D. Statterianum and thought to be a distinct natural hybrid.

Two good forms of Lælia crispa are sent from the collection of R. le Doux, Esq., Marlfield, West Derby, Liverpool, by Mr. Archer, one of them having a very dark front lobe to the lip. It is a very useful species at this season.

Flowers of two good forms of Cattleya Loddigesii are sent from the collection of D. M. Grimsdale, Esq., Kent Lodge, Uxbridge, together with another very fine flower of Oncidium Papilio. The latter plant, with those noted at page 195, are imported pieces bought of Mr. P. McArthur about a year ago.

One of the Veitch Memorial Medals for 1897 has been awarded to Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, in recognition of his great success in the hybridisation of Orchids.

Among the sixty recipients of the Victoria Medal of Honour, we note the names of William Boxall, William Bull, Sir J. D. Hooker, James O'Brien, the Hon. Walter Rothschild, F. Sander, Baron Schröder, and John Seden, all of whose work in connection with Orchids will be familiar to our readers.

## AN AMATEUR'S NOTES.

We are now in the midst of the dull season, so far as the show of Orchid flowers is concerned, though as regards quality we have some of the most effective of the whole year. Among Cattleyas first and foremost perhaps must be mentioned the splendid C. Warscewiczii, the largest and one of the most brilliant of the genus, which is just now flowering well. Then

we have the beautiful C. Rex, whose cream-white, sometimes almost light buff flowers, marked with yellow and rosy crimson on the front lobe of the lip are very charming, and also deliciously fragrant. C. Eldorado and its white variety Wallisii, together with C. Gaskelliana, are also in bloom, and also C. Loddigesii, C. Harrisoniana, C. Leopoldi, C. superba, and C. bicolor. Lælias are not nearly as numerous, but the fine old L. crispa, the pretty little L. Dayana and L. xanthina must all be included, together with Lælio-cattleya × elegans, which is always a great favourite, and the equally beautiful L.-c. × Schilleriana.

But the most charming of all the Orchids now in flower is, I think, Vanda cœrulea, its noble racemes and flowers of the most exquisite shade of lilac-blue commanding universal admiration. V. Kimballiana is also now at its best. Miltonia spectabilis and its varieties are also very effective just now, and the range of colour very remarkable. Then there is the brilliant Disa grandiflora, which is unsurpassed in the genus when it does well, though not so easily grown as some of the smaller ones.

Among other Orchids worthy of mention are Epidendrum nemorale, Oncidium incurvum, varicosum, obryzatum, Marshallianum, and one or two other small-flowered but very graceful species, Odontoglossum hastilabium, Uroskinneri and grande, the remarkable Cycnoches chlorochilon, Stenoglottis longifolia, the beautiful Cypripedium Charlesworthii, and various other species and hybrids. Dendrobium Phalænopsis is also flowering freely and will keep up a succession throughout the autumn, a character which gives it an additional value. It is one of the most useful Orchids at this season.

AMATEUR.

## DIES ORCHIDIANÆ.

THE event of the month has undoubtedly been the long looked-for flowering of the gigantic Grammatophyllum speciosum in the collection of Sir Trevor Lawrence. I don't know how long it is since a plant flowered in this country, but it must be a good many years, and it is probable that many of those who saw the inflorescence exhibited at the Drill Hall on August 24th, made its acquaintance for the first time. Many are familiar with the plant and have come to regard it as one almost impossible to flower, so that the great event came as a little surprise. Of course it was the centre of attraction at the Drill Hall, and no wonder, for it is veritable son of Anak, and one can only imagine what a good plant, bearing thirty of such seven-feet-long spikes would be like. Two or three of the smaller Grammatophyllums are now familiar in collections, and those who did not see the inflorescence in question can form some idea of what it was like if they will

imagine one of these smaller ones magnified to about seven feet long, and the flowers to at least five inches across, for in the dark brown spotting on a greenish yellow ground there is a great general resemblance between them. It is an interesting plant, undoubtedly, but too big for general cultivation, and too shy-flowering. "After all these years," a wag remarked, "it ought to be something worth looking at." And it was. And they gave it a Gold Medal, which it deserved, and a First-class Certificate, which I don't feel so sure about. Now what will be its future behaviour? Two or three plants have previously flowered in this country, but I don't remember to have heard of them again. So far as I can learn they don't die after flowering in a wild state, and there is no obvious reason why they should do so under cultivation. Perhaps the Burford plant may yet establish a record in this, for having flowered once it may possibly do so again. At all events its future behaviour will be watched with some interest.

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I read with interest the report at page 251 of the alleged breach of warranty with respect to the so-called Cattleya Aclandiæ alba, but as the case is still *sub judice*, I reserve any comments on the subject. At the same time I may extract a few additional particulars from the report in the *Manchester City News* for July 31st :—

"Mr. Tweedale, barrister, who appeared for the plaintiff, said that on June 26th and 27th, 1895, there was offered for sale by public auction the Broomfield collection of Orchids, Broomfield, Sale, belonging to Mr. Matthew Wells, who was relinquishing the cultivation of these valuable plants. The sale was without reserve. In certain of the lots it was expressly stated that they were in no way warranted to be what they were represented. Lot 401, however, was described as follows :—'Cattleya Aclandiæ alba, seven bulbs, three leads; only known plant." The pure alba or white flowered Orchid was a great rarity, and was worth about one hundred guineas, whilst the coloured Cattleya Aclandiæ was only of the value of some ten shillings. Mr. Ashworth attended the sale, and thought he could make a good thing out of this particular plant if he could purchase it at a reasonable price. It was knocked down to him for twenty guineas. Mr. Ashworth took home the plant, and had it carefully nursed. In June this year the flower came, and much to Mr. Ashworth's disgust it was a purple colour, being a common variety worth about ten shillings. Mr. Wells, in pure innocence perhaps, had warranted the plant to be an alba, which was not the case, and the question to be decided by his Honour was as to whether Mr. Ashworth was entitled only to the return of the amount paid for it, or to extra damages, for alleged breach of warranty. It was a test case of great importance to Orchid growers."

After the witnesses for the plaintiff had been examined and cross-examined—

"Mr. Newman addressed the Court on behalf of the defendant, and did not call any witnesses. He said Mr. Ashworth had frankly told them in evidence that the sale of Mr. Wells's collection of Orchids was attended by all the big dealers, and everybody else who thought or hoped they could make a bargain. Yet only twenty guineas was given for what was distinctly stated in the catalogue to be an alba. Mr. Newman asked what better test of value there could be than the price given at a public sale by auction? Witnesses had given evidence as to what they considered to be the value of the plant, and yet they admitted that they had never seen such a plant, and never heard of anybody who possessed one. The fact was that it was a pure mistake from beginning to end. It was stated that the plant was worth 150 guineas if it existed.

"His Honour: You warranted that you had got the plant.

"Mr. Newman said the widest possibilities ought also to be considered as to the existence of such a plant. Mr. Ashworth, in a letter to Mr. Wells, wrote that the plant had just flowered, and that he was sorry to say that the plant was not an alba, but only a common variety worth from eight to ten shillings. He should expect Mr. Wells to return the money paid for the plant with five per cent. interest, and ten per cent. for growing, seeing that the plant had doubled in size. He went on to say that he presumed Mr. Wells bought the plant from Messrs. Sander, and that it was the same as had been offered to himself for a large sum. Mr. Ashworth said nothing in the letter about the extra damages. As a matter of fact Mr. Wells obtained the plant from Messrs. Sander, and it was supposed to have come from Brazil.

"Mr. Tweedale, interposing, said perhaps Mr. Wells might tell the Court what he gave for the plant.

"Mr. Newman said he did not propose to offer any evidence on the point. He submitted that the best test was the market price. What would be given for it in the open market? In face of the warranty no one was willing to give more for the plant than twenty guineas. The amount given together with interest had been paid into Court, and Mr. Newman submitted that was the only damage that the plaintiff was entitled to.

"His Honour said as this was a test case, it was only reasonable that he should take time to consider his decision. He would therefore give it after the summer vacation."

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And thus the matter stands for the present.

ARGUS.

## ARE VARIETIES CONSTANT?

I ENDORSE most of Mr. De B. Crawshay's remarks in your last issue (page 244). He brings forward some very feasible arguments in support of his contention that varieties are in the main constant, and that the slight variations that do occur with Odontoglossum crispum are entirely due to the condition of the plant. I do not, however, quite agree with him when he says that when a plant has attained its maturity, that the "down grade" must necessarily follow until it ultimately die. That "millions" have died there is little room for doubt, but I incline to the belief that the true cause lies in another direction, and that it should not be disposed of quite so summarily. Neither can I follow him when the life of an Orchid is compared to that of a human being. An analogy could perhaps be better drawn with a human being and a tree. They both spring up, attain their prime "when their power is greatest," and after attaining their majority dwindle and die, leaving behind their offspring to do likewise. But an Orchid, I believe, may go on for ever, if the conditions are suitable for its growth. Could not Orchids, judging by their manner of growth, be more closely compared to herbaceous plants, amongst which, if given proper cultivation, consisting principally of dividing and transplanting in suitable soil, senile decay is unknown?

It is not, however, to differ with Mr. Crawshay that I write. My object is to answer his most pertinent question :—

HOW ARE WE TO KEEP OUR PLANTS AT THEIR BEST?

This is a task at once easy and difficult. It is a question we are all trying to fathom, for we are all striving to become more and more familiar with the simple requirements of the various Orchids which we cultivate, some from a purely practical, others from a scientific, standpoint. Mention has been made that the chemist is attacking the question, and that Dr. Smee's labours may be crowned with the success that they deserve is my wish. But I am mistrustful. I receive the news with gloomy forebodings, for does it not suggest an attempt at manurial aid? If we would keep our plants at their best let me here advise growers to shun manure as they would poison; give it a wide berth until Mr. Chemist, who is able to tell us the component parts, also demonstrates to us in a practical and successful manner how to re-charge the plants with any particular element they may chance to lack. Beware! do not use it in any form until you know perfectly well what you are doing.

Another good way to keep our plants at their best is to take the advice of those who write the "Calendars of Cultural Operations" week by week, and month by month, in the various gardening periodicals and journals. They are practical men of great experience. They freely write in black and white for the benefit of others all that they have gleaned during many years

of careful and close study. They have paid dearly for the knowledge they possess, and have bought it in a great variety of ways. Often enough they profit by their own failures. Frequently they gain useful knowledge quite accidentally. By their occasional visits to other collections they gain much information from their communications with brother growers ; and they can also in many instances see for themselves some new idea worth trying at home, and something else that should be avoided. Much has been handed down by their predecessors, and much has also been acquired by reading literature bearing upon the subject.

Now this last observation reminds me how scant is the literature having any reference whatever to the native habits of our plants, and most of that which does exist I maintain is misleading, through an absolute absence of detail. These facts seem to me to be the keynote of most of our failures. If an Orchid grower could possess some reliable guide, telling him all about the natural conditions, atmospherically and otherwise, which his plants occupy in their native home, with a correct scale of temperatures throughout the year, then indeed he would have something great and valuable upon which to base his cultural operations. If it was possible for such a work to come to his aid, it would be simply priceless. How much more would it be valued than most of the present day expensive works containing highly coloured paintings of flowers he already knows perfectly well, but containing otherwise little or no cultural information of any service to him whatever ? But I suppose it is really too much too expect a work of this kind to be produced. I well understand the great obstacles that would attend its compilation in a concise and complete form, for the chief contributors must necessarily be those people dwelling nearest the localities where each individual species grows the best, together with the keen and careful observations of the traveller or collector. Yet I have sometimes thought that something more in this direction could be done than has been hitherto. I have stated these views before, and I note that Mr. Rolfe in his admirable paper "Orchids at home and abroad," is strongly of the same way of thinking. And does he not instance a case in point (page 109), where treatment more or less correct was indicated by the discovery of the fibre of a tree fern which was recognised ? Thus our chances of success too often hang by a single thread.

Now I am not presuming to advise Mr. Crawshay. He is known to be well up with Orchids and their culture, and probably he could inform me upon many subjects. My advice is intended for beginners in the craft, who I know to be many. To them, I repeat, be guided mainly by professional growers. Endeavour to improve thereon if you like, but be careful in whatever experiments are made. Don't be too rash, but try one or two plants at a time. Although you may have a good gardener, remember that he has

not travelled over the whole earth's surface. Be contented with partial success ; and when a failure occurs let your superior education come to the rescue, by finding out as far as possible the natural conditions under which they grow. Do not pay too much attention to the passing whims or fancies of others, for Orchids can in a few days receive their death blow, although they may not die outright in that time. Do not think that because a section of your plants do worse this year than last that the treatment must necessarily be at fault ; but remember that the farmer cannot always secure good crops, and that the seasons rule the growth of indoor plants likewise. Because Mr. So-and-so grows a certain Orchid to the highest point of excellence is no reason why it will succeed with you, even though you give it identical treatment. It may be asked, Why ? To which I can only reply, Why does the hop grow best in Kent, or bulbs in Holland ? or why do not the hardy Alpine plants (Orchids are Alpines too) grow equally well in one garden as in another ? Anyone possessing an Alpine garden knows well the difficulty often experienced before the right positions are found for many of their plants.

H. A. BURBERRY.

## EPIDENDRUM FULGENS.

A HANDSOME orange-scarlet Epidendrum is cultivated in several collections whose identity has hitherto been somewhat doubtful, but the following notes, it is hoped, will serve to clear up its history. It was originally described and figured, in 1829, under the name of Epidendrum fulgens, by Brongniart (*Duperry Voy. Coquille*, Phan., p. 196, 43) from specimens collected in the island of Santa Catherina, South Brazil. Then it appeared as E. Schomburgkii var. confluens (*Lindl. Fol. Orch.*, Epidend., p. 70), in 1853, from specimens collected in British Guiana by Schomburgk, the former name being given as a synonym. The Guiana specimens from the same collector enumerated under the New Granadan E. decipiens, Lindl. (*l.c.*, p. 70) are also identical. Lastly, it is the E. Moseni, Rchb. f. (*Gard. Chron.*, 1880, xiv., p. 390), said to grow in clefts of rocks and dry sand on the sea shore, the locality not being further divulged. Messrs. Hugh Low & Co. have since introduced it from Rio de Janeiro. It is very distinct from E. Schomburgkii, Lindl., which has much longer sepals and petals, and a more deeply divided lip, while in E. fulgens the front lobe of the latter organ is very small, sometimes almost confluent with the side lobes, as Lindley's name would indicate. The flowers are borne in crowded heads, and by reason of their brilliant colour are very effective. They are also somewhat variable in colour. Plants have recently flowered in the collection of Sir Trevor Lawrence and at Kew.

R. A. ROLFE.

## ORCHIDS AT ROSEFIELD, SEVENOAKS.

An account of the interesting collection of Orchids grown at Rosefield, Sevenoaks, by De Barri Crawshay, Esq., was given at pages 230-234 of our first volume, and the following additional notes, taken at a recent visit, will probably be read with interest.

Odontoglossums are one of the features of the collection, and it is interesting to note that Mr. Crawshay has twenty-eight seedlings in various stages, and representing several different crosses, one of them, from O. apterum (nebulosum) crossed with a heavily blotched form of O. crispum, having apparently passed the critical stage, so that unless it meets with some unforeseen accident flowers may be expected in due time. Plants of O. Rossii carried some good seed-pods, an established plant of O. crispum which had ripened two pods had also made a good growth. Mr. Crawshay has observed that in order to get good seed-pods the plants should be well established, the old bulbs then having their own set of roots. Imported bulbs, which have lost their roots, fail to mature the pod.

Mr. Crawshay's collection affords some interesting evidence that under proper treatment Orchids may be cultivated almost indefinitely, for he still has the first Odontoglossum he ever purchased — a plant of O. luteopurpureum, bought as O. crispum Lehmanni in December, 1880, which is still healthy and vigorous, as are also two plants of O. crispum purchased in 1881. One plant of O. crispum carries healthy foliage on four successive years' growth, and a plant of O. × Coradinei Rosefield variety retains the pseudobulbs of twelve successive years' growth, the longest observed in the collection, if not anywhere. Another Odontoglossum forms a curious contrast to this, for the leaves invariably die at the end of the first year, and the bulbs only remain two years, and, curiously enough, this plant refuses to flower, though it has been in the collection thirteen years, and the imported bulbs also had not flowered. It came out a batch of O. crispum, mostly poor forms, which produced several hybrids, as this also is suspected to be. It may here be noted that Mr. Crawshay never cuts out the old bulbs, but leaves them until they dry up, when they are easily removed by twisting them round, without damaging the plant. O. Hunnewellianum is represented by a plant of the original importation, in 1889, and O. nævium dates from a much earlier period.

Among Cattleyas and Lælias many plants could be named which have been grown for many years, and among them the handsome form of Cattleya Lueddemanniana figured at t. 16 of the first series of *Warner's Select Orchidaceous Plants*, under the name of C. Dawsoni, which remains healthy and flowers every year. The only plant of Dendrobium Wardianum in the collection is in thriving condition, and the old bulbs are removed

every year when the new ones are three-fourths developed. Cymbidium Lowianum grows well in the Odontoglossum house.

In connection with the degeneration of Orchids under cultivation an interesting experiment is being made. Four plants, two each of O. crispum and O. Rossii, of about equal strength, have been selected for treatment with fertilising solutions, under the following conditions. Four soup plates are placed on the stage, each containing a group of three small inverted pots, on which the four plants above-mentioned are placed. One plant of each species is treated with a solution of carbonate of ammonia, at the rate of ¼oz. to 4oz. of water, and the remaining pair are treated with sulphate of ammonia of the same strength. The solutions are poured into the plates and are renewed weekly, the object being to see whether any appreciable improvement can be detected in the plants treated. The plants are not watered with the solutions, but in this and other respects are treated the same as the other plants in the house. The experiment we believe was suggested by Dr. Smee's papers on the Degeneration of Cattleyas, and it is too soon to speak of the results, but we may suggest that any benefit derived from the escape of volatile gases would probably extend to other plants in the house.

The development of diphyllous pseudobulbs among Cattleyas normally monophyllous was alluded to some time ago, and Mr. Crawshay pointed out two-leaved examples of Cattleya Warscewizii and Gaskelliana, and also of Lælia Perrinii and anceps, showing that the phenomenon is not at all rare.

Perhaps the most interesting hybrid in the collection is the one mentioned at page 232 of our first volume, derived from Sophronitis grandiflora ♀ and Lælia anceps Williamsii ♂, and also from the reverse cross, now known as Sophrolælia × Crawshayana. The plants have now made great progress, and are obviously intermediate between the parents, though they have not yet flowered. There is also a hybrid from Zygopetalum Mackayi ♀ and Z. Gautieri ♂, which, though fifteen years old, has not yet flowered, though the delay is probably due to an accident which checked and nearly killed it.

Among the more noteworthy plants in flower at this season may be mentioned fine examples of Lælia crispa and xanthina, Cattleya Gaskelliana Vanda suavis, some good forms of Odontoglossom crispum and Harryanum, O. Lindleyanum and others, also a nice healthy batch of Cattleya Dowiana in sheath.

Speaking of Odontoglossum Harryanum reminds us of a peculiarity which may have been noticed before. Experiments in hybridising have been made with this, as with so many others, and it is curious to see the change which takes place in the flower as soon as fertilisation takes place.

The white in front of the lip becomes light yellow, the disc much deeper yellow, and the violet-purple of the sepals and petals changes to deep red-brown, giving the appearance of two different varieties on the same plant.

We cannot take leave of this interesting collection without mentioning the fine series of dried flowers, preserved in their natural shapes, by drying them in sand, as previously described, and arranged on the shelves of a cabinet like butterflies. By this method Mr. Crawshay is able to compare the different varieties side by side, and in some cases to trace their constancy or otherwise from year to year in the most effective way. In short the inspection of this beautiful series of dried flowers added greatly to the pleasure of seeing the collection, for by no means yet known can they be induced all to flower at the same time.

## NOVELTIES.

DENDROBIUM CŒLESTE, Loher.— Described as resembling D. Victoria-Reginæ in habit, but the flowers only half or a third as large, and entirely dark blue, with the exception of the ovary and spur, which are purple. It is said to grow many hundred miles distant from the species just named, at 8,125 feet elevation, among quite European vegetation; Oaks, Rhododendrons, Azaleas, and Myrtles being its only companions. It is presumably of Phillippine origin.—*Gard. Chron.*, July 3, p. 1.

EPIDENDRUM STANHOPEANUM, Kränzl.—A species belonging to the section Amphiglottium holochilum, described from dried specimens collected in the Columbian Andes by Oscar Stanhope. It is allied to E. carinatum, Lindl., and has leaves marbled with dull purple, and short racemes of green flowers tinged with rosy purple, and some deeper spots on the lip.—*Gard. Chron.*, July 17, p. 29.

CATTLEYA WARSCEWICZII GIGANTEA, O'Brien. A very large and richly-coloured form which flowered in the collection of Joseph Broome, Esq., Sunny Hill, Llandudno. The flowers measure eleven inches in diameter, and thus equal one which appeared in the collection of the late G. Hardy, Esq., some years ago, of which an account is given at page 237 of our last volume.—*Gard. Chron.*, Aug. 7, p. 81.

ERIOPSIS HELENÆ, Kränzl.—A Peruvian species introduced by Messrs. F. Sander & Co., St. Albans, allied to E. biloba, Lindl., and E. sceptrum, Rchb. f., but said to have flowers twice as large. The sepals and petals are orange-coloured margined with purple, and the lip similar, but with a yellow blotch spotted with purple near the base.—*Gard. Chron.*, Aug. 14, p. 98.

## GRAMMATOPHYLLUM SPECIOSUM.

THE flowering of the remarkable Grammatophyllum speciosum, the giant of its race, in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, is an event of considerable interest, for the plant is not only rare in cultivation, but seldom reaches that state of maturity necessary for the production of flowers. Four previous cases are on record, but none of them very recent. Messrs. Loddiges, of Hackney, first flowered it in Europe, in 1852, and the event is thus recorded :—"At last the long cherished wish to see this in flower is realised. After years of patience, Mr. Loddiges succeeded in persuading it to expand a few blossoms last summer, all of which were in a monstrous state except one. Nevertheless they enabled our artist to prepare the accompanying figure, which gives some idea of what the plant is, only the flowering scape proceeded from the top instead of the bottom of the stem, whence it arises in a natural condition." (Lindl. in *Paxt. Fl. Gard.*, ii. p. 157, t. 69.)

In October, 1859, it flowered perfectly in the collection of W. G. Farmer, Esq., of Nonsuch Park, Ewell (gr. Mr. Carson), and was figured in the *Botanical Magazine* (t. 5157). The old pseudobulbs of this plant are recorded as nine to ten feet long, and the scape six feet high, and Sir William Hooker remarked :—"From its vigorous vegetation, and the remarkable size of the flowers, it richly merits the title of the Queen of Orchidaceous Plants." The two other recorded instances are, in the collection of Sir G. Taunton, at Leigh Park, where it flowered well, and in that of J. Day, Esq., at Tottenham, very imperfectly.

Some idea of the dimensions which the plant attains in a wild state may be gathered from the following notes. Mr. A. Keyser, Resident Magistrate at Selangor, records a plant which he found growing on a Durian tree. It measured 7ft. 2in. high, and 13½ft. across, and bore seven spikes of flowers, the longest being 8ft. 6in. high. It took fifteen men to move it (*Gard., Chron.*, 1890, vii., p. 265). Mr. J. H. Veitch speaks of one at the Botanic Garden, at Penang, as 42½ft. in circumference, the stems from six to seven feet long, the capsules with their stalk 7½in. long, without it 5in., and one of the preceding year's racemes, of which there were thirty, 7½ft. long (*Veitch Man. Orch.*, ix., p. 34). Still more remarkable is the one at the Buitenzorg Botanic Garden, Java, of which an account is given by J. C. Costerus in a paper entitled "Teratology studied in the Tropics." (*Ann. Jard. Bot. de Buitenz.*, xiii., pp. 111-113) :—"Before the head-gardener's house stands a very big tree (Canarium commune), on which a huge specimen of Grammatophyllum has settled. The plant forms a gigantic nest of roots continually spreading and enclosing the big trunk of the Canary tree. In 1892, when I visited the garden, this specimen

flowered with about fifty peduncles of a length of more than two metres, and each of them bearing 60, 70 to 100 blossoms. . . . The vigorous flowering was not repeated in 1893; nay, this striking phenomenon occurred that the evidently exhausted plant had no power to produce a single flower. In 1894 again a peduncle appeared, but only one. . . . 1895 was a very favourable year for the specimen in front of the head-gardener's house. As early as December, 1894, the pseudo-parasite was adorned with numerous flowering stalks."

The exhaustion caused by the production of such a number of flowers may easily be imagined, when it is stated that the inflorescence exhibited by Sir Trevor Lawrence, at the Drill Hall, Westminster, on August 24th, weighed, after it had been cut for more than two days, $1\frac{3}{4}$ pounds, and then forty out of an aggregate of seventy flowers were in the bud state, those at the apex being quite small, and two or three flowers had been removed. One flower with its pedicel weighed exactly a quarter of an ounce, so that at the very lowest estimate the aggregate weight of the fully developed inflorescence would have been over two pounds. We have also evidence that in a wild state capsules are, sometimes at least, produced, so that the flowering of the Buitenzorg specimen must have entailed a loss to the plant of something like a hundred-weight.

A few more particulars of the Burford inflorescence may be given. It measured over 7 feet long, the upper $2\frac{1}{2}$ feet, bearing 28 perfect opened flowers and 40 buds, the latter occurring in the last 7 inches at the apex, from which it will be seen that when cut the spike had not reached its maximum length—in fact the smallest buds were not a quarter developed, but all were healthy, and would apparently have opened in due course. Near the base of the scape were two abnormal flowers, having only two sepals and two petals, a peculiarity which seems constant, and is known to occur in several other species of the genus. In the present example there was an interval of 3 feet 2 inches between the last imperfect flower and the first perfect one, but one of the three intervening sheaths had produced a long axillary filament, representing an abortive flower. The two imperfect flowers were 9 inches apart, and measured $5\frac{3}{4}$ inches across, the largest perfect one reaching $5\frac{1}{4}$ inches. The inflorescence developed rapidly, and was observed to elongate as much as 6 inches in 24 hours.

The scapes are developed normally from the base of the pseudobulb, and arch over round the plant, but the abnormal inflorescence which appeared with Messrs. Loddiges was terminal at the apex of the pseudobulb, and only a few inches long. It is represented in the plate with three flowers, but the artist took the liberty of making all of them perfect, instead of one only as recorded in the text.

A large healthy specimen of this remarkable Orchid stands at the south-west corner of the Victoria tank at Kew, whose behaviour in the near future will be watched with interest, as judging by appearances it is mature enough to flower at any time. A peculiarity of the species is well shown in this particular specimen, namely its curious habit of producing numerous erect branching roots round the base. Similar roots are produced by certain Catasetums, Gongoras, and some other Orchids, but their precise use to the plant has not been made out.

R. A. ROLFE.

## CHEMICAL COMPOSITION OF CATTLEYA.

WITH a view of ascertaining the cause of the degeneration observed in certain Orchids after a few years cultivation, and some means of preventing it, Mr. Smee has put together a few observations on the chemical composition of Cattleya, together with some suggestions as to its food requirements, and laid the same before the members of the Orchid Committee of the Royal Horticultural Society, by whom they were referred to the Scientific Committee. A copy of these papers has been kindly sent by Mr. Smee, which are too long to reproduce in full, but we make the following extracts, for the subject is one of the greatest interest to Orchid growers.

In the *Gardeners' Chronicle* of February, 1894, there was an article on the chemical composition of Cattleya labiata, also giving the analyses of rain-water in temperate and tropical climates, which showed a large increase in the amount of nitric acid in the rainfall of the tropics as compared with the temperate zones. This is as may be expected, for it is well known that thunder rain contains nitric acid, derived from the rapid oxidation of the nitrogen of the atmosphere by the electric discharge, combining immediately with the pure ammonia in the atmosphere, forming ammonia nitrate.

In the neighbourhood of our large towns the atmosphere is injuriously affected by the products of the combustion of coal, in the form of sulphurous and sulphuric acid and ammonia, and in some places—for instance, the Tyne and Clyde—by chlorine given off from the chemical works. There is also given off some of the more volatile petroleum oils, which form a greasy slime, which in fogs is deposited on the glass of our plant-houses, and falling upon the leaves of the plants, interferes with their power of osmosis and exosmosis so necessary for their well-being.

I have myself noticed that the quantity of ammonia in the atmosphere was subject to considerable variation; the greatest amount was detected on days when the electric currents were feeble or totally absent. I have

also observed that the amount of oxidisable matter present in the atmosphere had no relation to the quantity of ammonia present.

I think it is probable that the relation of ammonia to carbonic acid has a considerable influence upon the growth of epiphytal Orchids. This is the probable cause that many Orchids—such as Oncidium varicosum on the one hand, and Phælenopsis on the other—cannot be kept in vigour for any length of time in this country.

The analysis of old and new pseudobulbs shows that there is less mineral matter in old bulbs when compared with the new. Apparently these plants have great difficulty in obtaining the earthy salts, and are, therefore, obliged to withdraw from the old bulbs some portion of their earthy constituents. We know that allowing the flowers to remain on the plants until they have withered is followed by the shrivelling of the pseudobulb and with it the exhaustion of the plant; the better the variety the more delicate the constitution of the plant and the greater the exhaustion caused by flowering.

It occurred to me that it would be desirable to find out which, if any, of the earthy constituents were removed from the pseudobulb by the flowers. For this purpose I sent up to my friend, Prof. Ogston, a large number of fresh-cut blooms of the largest and best varieties in my collection of Cattleya Mendelii, Mossiæ, and Lælia purpurata.

Comparing the analysis of the blooms with the composition of old and new pseudobulbs, it is evident that a large amount of the mineral constituents of the pseudobulb are abstracted by the flower. The question cultivators have to consider is, in what manner can these plants recuperate by the re-absorption of these mineral constituents into their organisms, for it is evident if they are not furnished with a means of obtaining a fresh supply they will continually withdraw these substances from their old pseudobulbs, with a result—impoverished growth, smaller and smaller in size, poorer blooms and ultimate death.

I therefore thought that it would be well to experiment upon an old and starved variety of Cattleya Trianæ. I fed this plant once a week, during the growing season, with two or three ounces of water, which contained nitrate of potash, nitrate of ammonia, phosphate of ammonia, and carbonate of magnesia, of the strength of half-an-ounce of nitrate of potash and half-an-ounce of nitrate of ammonia, with a small quantity of the other salts, with the result that the plant made stronger growth, produced a greater number of flowers, which were brighter in colour. In 1895 I tried a larger number of plants, and I was so satisfied with the result that in 1896 I added nitrate of potash and nitrate of ammonia each week during the summer to the rain water tanks of the Cattleya house. The total quantity used during the summer was 1lb. of the nitrate of ammonia and 1lb. of

the nitrate of potash. This worked put at the rate of 2·5 grains per gallon. Many of the flowers of the Cattleya which were shown at the Drill Hall on May 9th this year were larger, brighter, and had more substance than in previous years.

This year I intend to increase the amount to 5 grains per gallon during the summer, that is to say, from May to September. I also propose to treat some of the plants with small quantities of phosphate of ammonia and carbonate of magnesia, in addition to the nitrate of ammonia and potash. I expect that I shall be able to make a favourable report on a future occasion on the results of these experiments.

Orchids take up through their leaves carbonic acid, free ammonia, and water in the form of watery vapour, but I believe the alkalies and earthy salts are taken up through the roots. It is probable that many of the Orchids which grow, in their native habitats derive their earthy salts from the bark of the trees on which they grow, by a process of dialysing the earthy salts from the tree and absorbing them through the root of the Orchid. I have found that hanging an Epidendrum ciliare up and simply watering, although it flowered for the first year or two, ultimately perished, no doubt due to exhaustion caused by the removal of a certain proportion of the earthy salts by the flowers, and by the inability of the plant to obtain a fresh supply of the earthy salts. Dendrobium nobile will also exist for a year or two under similar conditions, but will gradually decrease in the size of its growth, and ultimately perish.

I suspect that phosphates increase the inflorescence of plants. Last year I watered a Marechal Niel rose in a pot with water containing nitrate of ammonia. Although the plant made a strong growth of 10 feet in length, the flowers were very few in number this year, and badly developed: on the other hand, two Gloire de Dijon roses, which I fed with phosphate of ammonia in addition to the nitrate, had in the one case 93 and in the other over 180 large and fully-expanded blooms open at the same time.

In concluding this letter, I cannot help expressing a hope that the Horticultural Society or Amateur Orchid Growers will raise a fund to be expended in having a thorough analysis made by a professional chemist of the chemical constitution of Orchids, together with the mineral and alkaline salts of the flowers, and pseudobulbs of the principal species of Orchids, which are in cultivation at different seasons of their growth. I feel convinced that many obscure points in their habits would be cleared up and a more rational treatment would follow, in place of the empiric and rule of thumb method of cultivation now in vogue.

A. H. SMEE.

The Grange,
Carshalton.

## EPILÆLIA × RADICO-PURPURATA.

We have now much pleasure in giving an illustration of the remarkable and very handsome Epilælia × radico-purpurata, which was described at page 232 of our last issue; together with one of its parents, Epidendrum radicans, for comparison. It is reproduced from a photograph which Messrs. Veitch have had taken for the *Review*, and it will enable all our readers who know the old Epidendrum radicans—and who does not?—to form a very correct idea of the general character of the new hybrid. It was intended to include a flower of the seed parent, Lælia purpurata, in the photograph, but being late in the season all the flowers were over. This parent, however, is so familiar to everyone that the statement that the figure is reduced two-and-a-half times below natural size will enable anyone to complete the comparison. The Epidendrum parent has not come out

Fig. 12.—Epilælia × radico-purpurata.

Fig. 13.—Epidendrum radicans.

as clearly as could be desired, chiefly owing to its colour, which does not lend itself well to photography. The photographer has also reduced the size rather more than was strictly necessary. It is not necessary to repeat the history of the plant, so recently given, but our readers will note how completely the hybrid has departed from the seed-parent in general character. One could scarcely have guessed its origin, but knowing its history it is possible to trace the modified characters back to their source. We must congratulate Messrs. Veitch on their latest acquisition, which we anticipate will prove a good garden plant, as both parents are vigorous growers and very floriferous. It will be seen that the first flowers are not quite perfect, but this may be only a temporary defect owing to weakness.

## EPIDENDRUM RADICANS.

THIS handsome species, of which a figure appears on the preceding page (fig 13), is a native of South Mexico and Central America, and was originally introduced to cultivation by Mr. G. Ure Skinner, who sent it from Guatemala in 1839. It flowered for the first time in Europe in the collection of Mrs. Lawrence at Ealing Park, in the summer of 1844. According to Mr. Skinner, in its native country it grows among long grass and dried leaves, and flowers from October to January. It had previously been found in South Mexico, and named in MSS. by Pavon, the name being published by Lindley in 1831 (*Gen. & Sp. Orch.*, p. 104). The stems grow to five feet high or more, and produce numerous roots, whence its name was derived, as also the later name of E. rhizophorum, given by Bateman in 1838 (*Bot. Reg.* xxiv., Misc., p. 8). The flowers are borne in many-flowered, corymbiform racemes, and owing to their brilliant orange-scarlet colour, and much fringed three-lobed lip, are very effective. Its chief drawback is its tall, climbing habit, for which reason it should be trained to a trellis or some other suitable support, and when thus grown it usually proves very floriferous, and wherever the necessary space can be spared it forms a very desirable addition to the collection.

Some years ago it was taken in hand by the hybridist, and several handsome hybrids from it have now appeared, the first being Epidendrum × O'Brienianum, which flowered in 1888. In every case it has been used as the pollen-parent, and curiously enough, Mr. Seden, who has made various experiments with it as the seed parent, has never yet succeeded in obtaining a single seed-pod on it. Mr. Eichel remarked at page 115, "The plant is a good seed-parent, and hardly ever fails in producing good seed," a point which we should like to see confirmed. The hybrids which have at present flowered are as follows, being arranged in the order of their apppearance :—

| HYBRID. | SEED-PARENT. |
|---|---|
| Epidendrum × O'Brienianum. | E. evectum. |
| E. × dellense. | E. xanthinum. |
| Epiphronitis × Veitchii. | Sophronitis grandiflora. |
| Epicattleya × matutina. | Cattleya Bowringiana. |
| Epilælia × radico-purpurata. | Lælia purpurata. |

The second of these was raised by Mr. Ballantine, in Baron Schröder's collection, at The Dell, Egham, and the remainder by Mr. Seden, in the establishment of Messrs. James Veitch & Sons. Others may be anticipated in due course, as the results hitherto obtained are so promising that further experiments are sure to be made.

## CLOSELY ALLIED HYBRIDS.

THE article under the heading "Cypripedium Curtisii and its allies," at p. 199 of the July number of the *Review*, induces me to send you blooms of three Cypripedium hybrids, bought and invoiced respectively as Cypripedium × Gowerianum, C. × Sylvia, and C. × Smithii. I am only sorry that I have not a bloom of Cypripedium × Euryale to accompany them.

Here you have hybrids from C. Lawrenceanum ♀ × Curtisii ♂ and the reverse, and C. Lawrenceanum ♀ × ciliolare ♂, and I have no reason to doubt the correctness of the parentage in the blooms sent for your inspection.

I do not think your words, "As the three species given in the left-hand column (C. superbiens, C. ciliolare, C. Curtisii) resemble each other so closely, it necessarily follows that their hybrids cannot be very distinct," &c., could be more practically verified than by a comparison of these flowers.

REGINALD YOUNG.

Sefton Park, Liverpool.

[The flowers sent illustrate another phase of the same argument in a very effective manner. C. × Sylvia we consider to be only a variety of C. × Gowerianum (under the rule dealing with reverse crosses), and might have been derived from the same seed-pod, the petals, however, being rather less spotted. C. × Smithii is also very similar, but has a shorter and broader dorsal sepal, broader petals with larger spots, and a rather shorter, more compact lip—in fact it is superior from a florist's standpoint, though all are very beautiful. C. × Euryale is necessarily closely allied, as the three hybrids are derived from the crosses C. Curtisii, ciliolare, and superbiens, respectively, with C. Lawrenceanum. In the same way hybrids between any given species and three or more closely allied ones would give a corresponding number of closely allied hybrids. For example, C. concolor crossed with the allied species C. barbatum, Lawrenceanum, and callosum, give the allied hybrids C. × tessellatum, C. × conco-Lawre, and C. × conco-callosum; and many similar illustrations could be given. Such hybrids as those now cited, however, though very nearly allied to each other, are very different from their respective parents, while the crosses between the allied species themselves cannot even be very distinct from their parents, and thus it becomes a question whether such crosses as those mentioned at page 199 are worth making. Or, taking another illustration, we may ask, Is it worth while making crosses between C. barbatum and callosum? or between C. callosum and Lawrenceanum? That between C. Lawrenceanum and barbatum, it is true, has been made, resulting in C. × almum, which is good, because its parents are, but certainly not very distinct.—ED.]

## SPOT IN ORCHIDS.

A LECTURE on the Diseases of Plants, given at the Drill Hall, on March 17th last, by Mr. George Massee, F.L.S., is printed in the last part of the *Journal of the Royal Horticultural Society* (Vol. XXI., Part 1), and contains the following account of the Orchid Leaf Rust (Glœosporium cinctum, Berkl.) :—

"This is the most generally distributed of fungus parasites with which the cultivator of Orchids has to contend. It does not as a rule kill the host-plant, but the leaves are disfigured by its presence, and in addition to robbing the plant of a certain amount of material elaborated for its own use, proves injurious in rupturing the epidermis in many places, and thus facilitating the escape of water from the leaf, and, as a consequence of which, the balance of absorption and transpiration is upset. This fungus may be considered as a very simple type of parasite, inasmuch as, so far as is known, only summer spores are formed, but as the leaves of Orchids are always present, the spores find a suitable place for germination throughout the year; secondly, the fungus completes its development on one and the same host-plant.

"Inoculation takes place by the spores being conveyed by some means on to the surface of a damp Orchid leaf, germination takes place at once, and within a few hours the germ-tube, or first-formed mycelium, produced by the germinating spore, pierces the epidermis of the leaf, and enters the tissues, where it spreads in the interior of the leaf-cells, finally rupturing the epidermis to form its spores on the surface of the leaf. The fruit appears in small patches, a quarter to half an inch across: these patches are at first pale green, then yellowish or almost white, and in the case of fleshy leaves, sunk a little below the general surface of the leaf,as if they had been pressed down by the tip of a finger. When examined with a pocket-lens, each fruit, of which there are several on each pale patch, is seen to be surrounded by a blackish ring, hence the specific name of the fungus.

"The potassium sulphide solution mentioned . . . destroys the germinating spores of this fungus, and as the parasite has been observed on several different kinds of Orchids, spraying all the plants present in a house where the pest has been observed is necessary."—l.c., pp. 83, 84.

The solution alluded to consists of half an ounce of potassium sulphide dissolved in a gallon of water, which, when sprayed on to the plants, will destroy most germinating spores, and, being clean, may be used wholesale in greenhouses where Bordeaux mixture could not be used on account of the whitewash effect produced on everything with which it comes in contact. Potassium sulphide dissolves most readily in hot water, which should be allowed to cool before spraying.

## THE HYBRIDIST.

### Lælio-cattleya × Robin Measures.

A flower of this distinct and pretty hybrid, which was exhibited at the Royal Horticultural Society's meeting on August 24th, has been received from Messrs. F. Sander & Co., St. Albans. It was obtained by crossing Lælia xanthina with the pollen of Cattleya granulosa, and well combines the characters of its two parents. The flowers on the whole most resemble the Cattleya parent in shape and size, but the petals are straighter and not narrowed below in the same way, while the lip is much modified in shape. The sepals and petals are yellow, the latter over an inch broad, the side lobes of the lip yellowish white outside, and the front lobe of the lip light purple. The lip is three-lobed, as in the Cattleya parent, but is not so deeply divided, and the front lobe is much shorter and less narrowed below, in fact it extends very little beyond the tips of the enlarged side lobes. The pollen shows the usual intermediate character of hybrids between the two genera, and in this, as well as in the colour and modified shape of the flower, the influence of the seed parent is seen. It is probably not yet fully developed.

## DENDROBIUM VICTORIA-REGINÆ.

The original description of the new Dendrobium Victoria-Reginæ (Loher in *Gard. Chron.*, 1897, xxi., p. 399) contained no indication of the affinity of the species, a point which can now be cleared up, the plant having flowered in several collections. It belongs to the section Pedilonum, having the tooth-like process on the claw of the lip seen in many species of that group, but the chin is shorter than in most others, and so far as I can find it is very distinct. On the whole it seems nearest to D. rhodocentrum, Rchb. f., in shape, but it is very distinct in colour. D. sanguinolentum, Lindl., and D. ionopus, Rchb. f., have a three-lobed lip, but are otherwise comparable in several respects. The figure recently published in the *Gardeners' Chronicle* (Aug. 21st, p. 121, fig. 34) gives an excellent idea of its character. The colour of the upper part of the segments, however, I should describe as violet-purple—it is certainly not blue—though at the same time it is very distinct in this respect from every other species known to me. The lines at the base of the lip are blackish purple in colour. The racemes at present are two-flowered, but are described as three- to twelve-flowered in the wild state, from which we may infer that it is not yet normally developed under cultivation.

R. A. Rolfe.

## CALENDAR OF OPERATIONS FOR SEPTEMBER.

By W. H. YOUNG, Clare Lawn, East Sheen.

To the cultivator of cool Orchids, the advent of this month is a real pleasure, for there is no month in which these plants make more real progress than they do in this, the temperate climatic conditions usually prevailing at this season being conducive to active growth and healthful vigour in the plants, when the operations depending on the gardener are carried out in a consistent manner. The atmosphere being cooler and moister than during the preceding month, considerably less damping and shading will be needed, though, as heretofore, the blinds should not be removed until the sun has lost its strength, or clouds obscure its ever welcome rays. So far as this department is concerned no fire heat will be needed this month, that is, providing unseasonable weather does not intervene. An abundance of air at night will be as essential as having plenty during the daytime, for it is to a very great extent the dewy nights that produce such beneficial results, therefore to exclude air because it feels chilly to us after experiencing such sultry weather last month would be depriving the plants of a wonderful health and life-giving element. No harm will reach the occupants of these houses so long as the night temperatures do not recede below 50° or a trifle lower, when the weather is fairly mild during the daytime. No doubt as the month advances an increased amount of artificial heat will have to be called into action for the warmer houses, but this should be done with great care and discretion, or incalculable harm will result from a too free use of the fire-irons.

It may be as well to mention here that a great deal of annoyance and worry would be saved or entirely eliminated were the flues and chimneys of the respective heating apparatus cleaned and thoroughly overhauled this month, so that when a good supply of heat is wanted the fires will burn and generate heat quickly and economically. Work of this description should never be left until it becomes an imperative necessity, for inability to raise or sustain the inside temperature when adverse climatic conditions render it a necessity means damage to the plants, often of an irreparable nature.

So long as the weather be favourable, summer temperatures should prevail in all the warm houses, though a slight decrease in those tabulated for the night should occur as the month draws to a close. Almost all operations that have through the summer been of daily occurrence should be modified to suit the conditions of the declining season, each day having a less amount of light and direct sunshine, shading will naturally not be required on the houses so early in the morning, and likewise should be removed earlier in the afternoon.

Continue potting and top-dressing the Odontoglossums as they reach the

stage suitable for that operation, and afterwards bear in mind the advice proffered in last month's Calendar respecting over-watering. In addition to O crispum, such species as Hallii, triumphans, tripudians, and those of the luteopurpureum section, with the natural hybrids elegans, excellens, &c., will all need attention this month or next. Also O. cordatum and maculatum, Oncidium olivaceum (cucullatum), Phalænopsis, and nubigenum are commencing to grow, and should, so soon as they have made sufficient progress to suggest the early appearance of roots, be given fresh rooting material, and shortly afterwards a more liberal supply of water.

The Pleiones have now about completed their growth for this season, and the leaves which are deciduous will soon fall away. Bearing this in mind, much less water should be given, though until the flowers appear the compost should not become dust dry. There is with these practically no resting period, for almost before the old leaves have disappeared the young growths, in which the flower scapes come up, make their appearance, hence growth in some shape or form is always in progress. P. humilis is only about half-way through its season's work, and must still be given a fair average supply of water.

Thunias, Bletia hyacinthina, and any other Orchid that has been standing outside during the summer, must now be brought in and placed in a dry, cool position in which to pass the winter. If the leaves have not all fallen off the Thunias, water should be still supplied, though not often.

The evergreen Disas that have been in a frame had better be removed to a place where frost is unlikely to do them harm. A position corresponding to the one occupied by them outside should be selected, so that the growth made will not become attenuated and weak from excessive heat and moisture; the latter, of course, is appreciated, but an abundance of air at the same time is as essential to their well-being. We re-pot our plants in the spring, but now is also a suitable time for those that were not done early in the year. Well drained pots or pans should be used, and a compost consisting of sandy peat two-thirds, and the remaining third of chopped moss and coarse silver sand, mixing in as the work proceeds a few lumps of sandstone. The young plants should be potted together according to their size and strength, so that they will under ordinary circumstances flower all together. The smaller runners may be put in a pan to grow on for a season. A good soaking should be given when completed to settle the compost about their roots, afterwards a moderate supply will suffice so long as the soil does not become dry. Of the deciduous Disas I have nothing to say, as my experience with them is not of a suitable nature to place on record.

The Barkerias, thanks to the brilliant weather experienced this year, have made excellent headway, and are now throwing up their slender flowering stems from the apex of the growth, and new roots are pushing out

in quantities from the base. The plants must still be kept well watered by dipping when dry, and syringed on all bright days, during this and the succeeding month. Epidendrum Wallisii, Endresii, and the hybrids derived from the above two, are growing freely in a shady position at the cool end of the Cattleya house, a plentiful supply of water being enjoyed by them all.

The useful and easily-grown Sophronitis grandiflora occupies a similar position in this house, along with its varieties, rosea and coccinea, also S. cernua and violacea. The former three are grown in pans in the ordinary Orchid mixture, and are now making new growths, from which shortly the brilliant-coloured flower-buds will emerge. A fairly moist condition at the root is as near what they require as it is possible to state, the quantity of water supplied varying according to the state of the roots. S. cernua, owing to its peculiar mode of growing, is best accommodated on a circular block, apple or pear-tree wood being about the best to use for this purpose; fixed on this, and suspended with the others, success is assured, providing it be dipped frequently enough to prevent shrivelling. S. violacea is not such a tractable subject; imported plants are often received growing on the bare bark of a tree, which, to my mind, points to the fact that material about its roots is undesirable; therefore, to obviate this, a block or a raft made with thin teak-wood rods should be employed for it to grow on, taking care, as stated above in reference to S. cernua, to provide it with sufficient moisture by frequent dipping. Too much direct moisture is, however, not good for it when the growths are undeveloped, as they are apt to damp off.

Phalænopsis amabilis (grandiflora), Aphrodite, Schilleriana, Stuartiana, Sanderiana, also P. × leucorrhoda, and its variety casta, make more apparent progress during this month than during any of the twelve, and as the appearance as well as the life of the plants depend on the leaf production, every care and known device should be resorted to that will give the leaves a chance of becoming thoroughly matured. The air of the house should be changed as frequently as possible, consistent with keeping the temperature right and the atmosphere humid, and the shading should only be employed when absolutely necessary to break the strength of the sun's rays, so that the newly made leaves may acquire that solidity of texture necessary to enable them to resist the changes and fluctuations of light and heat during our long dull winter. Where the moss has grown long and rank it is preferable to pull it off, rather than let it remain to hold a large quantity of water round the collar of the plant, as this is the chief cause of failure in connection with this genus. When a large amount of moss has accumulated it is apt to mislead one as to the state of the whole, the tips becoming dry if not continually saturated, whilst the moss is still full of moisture. Dead and decaying moss is as bad, and any plants having the moss in this state should have it removed and its place supplied

with new. The baskets or other receptacles should only be dipped when the moss has reached a state of dryness, and if any watering be done previous to this, it should only be the crocks and lower bars of the baskets that should be wetted. The leaves should be sponged with tepid rain water frequently to keep them free from dust and dirt, and thus give them a chance of doing their work properly. P. violacea, speciosa, Lueddemanniana, Mariæ, Boxallii, Mannii, cornu-cervi, &c., are all more or less in a state of activity, and should be treated accordingly. Speaking generally, these require more shade and moisture than the first-named section, though if other conditions, such as air and temperature be not right, it is an easy matter to give these too much of the former also. P. Esmeralda is now in bloom, and will not need much water after the spikes are cut off, the moisture in the house satisfying the needs of this to a great extent. P. Lowii is the worst of the whole genus to grow and keep in a satisfactory condition. We have a small piece here that has been on a raft for about seven years, laying on the ashes on the stage, and where it sometimes has no leaves and at other times two or three. However, it usually produces a few flowers in season. It is a delightful species when seen at its best, and I well remember a fine specimen that existed in the Kew collection some ten years ago, growing on a flat piece of board, and on one particular occasion it produced a branched spike upwards of fifteen inches in height. I am afraid that one would look for it in vain at the present time. It evidently relishes a large amount of moisture during the growing season and afterwards a long and somewhat dry resting period similar to P. Esmeralda, both being to a certain extent deciduous in their native habitat.

The magnificent and floriferous Dendrobium Phalænopsis is now about to flower on this season's growths, everything having been favourable to the production of large and well developed pseudobulbs, which should in turn produce strong many-flowered scapes. A fair amount of water will still be required by these until the flowers are over, when the commencement of a long and complete rest should commence. No shading will be required for these plants from now, nor in fact on any of the Dendrobes, without it be for an hour or so during the hottest part of the day in the early part of the month. Associated with the above are the variety Statterianum, and the allied D. bigibbum. The grand white-flowering D. formosum giganteum is producing its blooms on the early made bulbs, and should be treated like the fore-mentioned; those not in such a forward state must, however, be more plentifully supplied with water. D. densiflorum, thyrsiflorum, and Farmeri, should, as they finish up their bulbs, be removed to a light and airy spot in the Cattleya or similar house.

The gorgeous-coloured and much sought-for Cattleya Dowiana aurea

comes into bloom this month, and where there is a dozen or more plants, a succession is kept up during this and the next month. Repotting or top-dressing may be done soon after the plants have gone out of bloom, as it is then that new roots emerge from the base of the last-made bulbs. C. Dowiana chrysotoxa and other geographical forms, together with C. Rex, should be treated likewise. Very careful treatment is needed after root disturbance, especially so far as watering is concerned, an over-dose often proving fatal to the plant's existence at this juncture. It is much better to give too little, as then the evil is not so great. A secondary growth often makes its appearance at this season, or a little later on, and to hasten its development, and to insure its maturing before the winter sets in, plants in this condition should be given the most favorable position in the East Indian house until these latter have developed. If a sheath is produced in these later growths, it is the wisest plan to remove it with a sharp knife before the flower-buds appear. Lælia crispa, having flowered during the past month, will shortly commence to grow again, but very little difference in the treatment will be needed to that in force previously. Of course if any of the plants are forward enough to repot, it should be done as advocated for the other Lælias and Cattleyas.

Hybrid Cattleyas and Lælias, and the hybrids between the two genera, have become so numerous that it is impossible to keep count of their number other than by notes and references, many being the produce of such diverse parentage that is a often a matter of doubt how to treat them, but a pretty safe rule to follow is, I think, to treat the hybrid the same as one would the parent it most resembles. For instance, when a plant such as Lælia × Euterpe takes after L. Dayana more than L. crispa, its other parent, its treatment should follow the lines adopted in the cultivation of L. Dayana, and so on through the list. If either of the parents have a decided partiality for, or disapprobation of a certain course of treatment, these traits should be borne in mind when dealing with the progeny, for it will be more to the plant's advantage to study any small or peculiar trait in the character of the weakest parent, than to treat the plant on the assumption that what the strongest parent approved of the weaker one would be sure to appreciate. Take for instance those hybrids such as Lælio-cattleya × Ingramii, which has Cattleya Dowiana aurea as one of its progenitors; it is a well-known fact that Lælia Dayana, the other parent, has a much better constitution than the former, but to grow the resultant cross well, one has to treat it similarly to C. D. aurea.

A great deal more might be said on this subject, but perhaps these few words will provide ideas for the better cultivation of these rare, and often-times unique, home-raised Orchids, which are now such a feature of our collections.

## MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

At the meeting of this Society, held at the Coal Exchange, Manchester, on July 29th, there was an exceptionally fine display of Orchids, and with the increasing interest shown, the Committee has decided to strike and award Medals of three classes, Gold, Silver, and Bronze.

The President, William Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), exhibited a very fine Epidendrum vitellinum majus (Award of Merit), a fine Odontoglossum Schlieperianum with branching raceme (Award of Merit), O. Pescatorei with large, finely-shaped flowers (Cultural Commendation), and Dendrobium longicornu majus, a fine plant bearing about sixty flowers (Cultural Commendation).

E. J. Sidebotham, Esq., Earlsfield, Bowdon (gr. Mr. Shiner), showed the handsome Dendrobium speciosissimum, which has now developed something like its true character, and a fine plant of Cattleya Lueddemanniana (speciosissima), each of them receiving a First-class Certificate.

A. Warburton, Esq., Vine House, Haslingden, sent a superb form of Cattleya × Hardyana (First-class Certificate), and a good Phaius Humblotii (Award of Merit).

Captain Law-Schofield, New Hall Hey, Rawtenstall (gr. Mr. Schill), showed a fine Cypripedium × Massaianum, to which an Award of Merit was given.

H. Greenwood, Esq., Highfield (gr. Mr. Spurr), exhibited a good plant of Cypripedium × œnanthum superbum, and a fine form of Dendrobium Phalænopsis, each of them receiving an Award of Merit.

T. Statter, Esq., Stand Hall, Whitefield (gr. Mr. Johnson), exhibited the beautiful Cattleya Rex, with a four-flowered raceme, and the rare and beautiful Lælio-cattleya × Amesiana, each receiving an Award of Merit.

William Bolton, Esq., Otterspool, sent two plants of Oncidium Lanceanum, one a fine plant of the typical form to which a Cultural Commendation was given, the other a darker variety, which received an Award of Merit.

G. S. Ball, Esq., Ashford, Wilmslow (gr. Mr. Hay), received a Silver Medal for a fine group of about two dozen plants, including a fine Masdevallia Veitchiana, a very good Cypripedium Curtisii, an excellent specimen of Dendrobium Dearei, D. Phalænopsis (Award of Merit), &c.

William Bolton, Esq., exhibited a good form of Cattleya Schilleriana, which received an Award of Merit.

S. Gratrix, Esq., Whalley Range (gr. Mr. McLeod), exhibited Cattleya Gaskelliana Fairy Queen, a beautiful variety (Award of Merit), and Cypripedium × selligerum var. Monica.

John Leemann, Esq., Ashton-on-Mersey, received an Award of Merit for a fine plant of Sobralia leucoxantha.

E. S. Clark, Esq., Wrexham (gr. Mr. Edwards), exhibited a fine Oncidium Lanceanum (Cultural Commendation), a good Lælio-cattleya × Arnoldiana, and a well-flowered Dendrobium Bensonæ.

W. A. Gent, Esq., Brooklands, exhibited a good Cypripedium Parishii, to which a Cultural Commendation was given.

William Cowan, Esq., Otterspool, was awarded a Silver Medal for a good group, including Cattleya Dowiana aurea, C. Warscewiczii, C. Harrisoniana, C. Schilleriana, and various other Orchids, with some good cut flowers.

At the meeting held on August 12th the exhibits were again numerous, forty-seven plants being staged from various collections, and of these four were selected for First-class Certificates and twelve for Awards of Merit. No groups were staged on this occasion.

Dr. Alexander Hodgkinson, The Grange, Wilmslow (gr. Mr. Moore), staged Sobralia macrantha Hodgkinsoni (Rolfe), an exceptionally large and handsome variety, which was described at page 236 of our second volume (First-class Certificate), and a most beautiful plant of the brilliant orange-scarlet Lælia monophylla with over two dozen flowers, which deservedly received both a First-class Certificate and a Cultural Commendation. This plant was the gem of the meeting and formed the great centre of attraction during the afternoon. It is a native of the hills of Jamaica, and has been grown comparatively cool. A good Cattleya Rex and C. Eldorado splendens were also shown.

T. Statter, Esq., Stand Hall, Whitefield (gr. Mr. Johnson), sent a handsome plant called Cattleya Gaskelliana alba, though there was a slight flush of pale pink in the segments (First-class Certificate), a very good Cattleya × Brymeriana (Award of Merit), a plant of the old typical C. Dowiana (Award of Merit), Lælio-cattleya × elegans Bluntii, with brilliantly coloured lip (Award of Merit) and Cypripedium × Charles Canham.

G. Shorland Ball, Esq., Ashford, Wilmslow (gr. Mr. Hay), staged a small plant of the beautiful Masdevallia Veitchiana grandiflora in excellent condition (First-class Certificate), and a beautiful form of Cattleya Gaskelliana with white flowers, pencilled between the margin of the lip and the yellow disc with faint rose-pink lines, giving a very pretty effect.

H. H. Bolton, Esq., Newchurch (gr. Mr. Eastwood), showed a fine form of Lælia crispa, to which an Award of Merit was given.

Walter Clarke, Esq., Wrexham (gr. Mr. Jones), staged the fine Cypripedium × Harrisander (Award of Merit), C. × Youngianum and C. × Alice.

S. Gratrix, Esq., Whalley Range (gr. Mr. McLeod), showed a good plant of Cypripedium × Gratrixianum, a handsome hybrid, to which an Award of Merit was given.

John Leemann, Esq., West Bank (gr. Mr. Edge), exhibited a good specimen of Stanhopea tigrina with several flowers (Award of Merit), Cattleya Warscewiczii, C. Gaskelliana, and a good dark Lælio-cattleya × elegans.

Captain Law-Schofield, Rawtenstall (gr. Mr. Schill), sent a good form of Lælio-cattleya × elegans with a very richly-coloured lip, to which an Award of Merit was given.

Henry Steel, Esq., Tapton Court, Sheffield (gr. Mr. Howarth), sent Odontoglossum crispum var. Henry Steel, bearing a spike of a dozen fine flowers blotched with pale lilac, to which an Award of Merit was given.

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), sent a very richly-coloured form of Cypripedium Lawrenceanum.

Mr. James Anderson, Wallace Avenue, exhibited Cattleya Warneri magnifica, a highly-coloured form (Award of Merit), C. superba splendens, several varieties of C. Harrisoniana, and a fine form of Odontoglossum crispum with a well-spotted lip, which the Committee desired to see again.

Messrs. Charlesworth & Co., Heaton, Bradford, exhibited the beautiful Cattleya Eldorado Wallisii (Award of Merit), Lælio-cattleya × velutino-elegans, L.-c. × Schilleriana var. Stelzneriana, Odontoglossum Pescatorei, Cypripedium × apiculatum, and C. × Hypatia.

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

At the meeting of the Royal Horticultural Society, held at the Drill Hall, James Street, Westminster, on August 10th, there was about an average display of Orchids for the season, but very little in the way of novelty.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent a well-flowered plant of Masdevallia infracta purpurea, the handsome Eulophia guineensis, a splendid plant of Platyclinis filiformis, bearing ninety-four of its graceful spikes of yellow flowers, to which a Cutural Commendation was given, and a good plant of the singular little Epidendrum (Nanodes) Matthewsii, which received a Botanical Certificate.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), received an Award of Merit for Lælio-cattleya × elegans Schrœderiana, one of the darkest and richest-coloured forms yet seen.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), showed a fine panicle of the brilliant crimson Renanthera Storiei, and four handsome hybrid Cypripediums, all of which had C. Rothschildianum for

the pollen parent. These were C × Massaianum, a seedling from C. × superciliare, C. × A. de Lairesse, a seedling from C. Curtisii, C. × Neptune, a seedling from C. × Io grande, and C. × callo-Rothschildianum, a seedling from C. callosum. The latter, which received an Award of Merit, is a very fine thing, with ivory-white flowers somewhat tinged with rose, the dorsal sepal closely lined and the petals densely spotted with purple-brown.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), sent Cattleya Dowiana magnifica and Dendrobium Victoria-Reginæ, the latter receiving an Award of Merit.

W. H. Lumsden, Esq., Balmedie, Aberdeenshire (gr. Mr. Roberts), sent Cypripedium × Balmedianum, said to have been derived from C. Stonei ♀ and C. Fairrieanum ♂, but some transverse line-like markings in the leaves suggested rather C. × Harrisianum as one parent. The inflorescence bore three flowers, most like those of C. Stonei, but the dorsal sepal was more closely lined, and the petals greenish with some chocolate lines and spots.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), exhibited the distinct and pretty Lælio-cattleya × Andreana.

G. W. Law-Schofield, Esq., New Hall Hey, Rawtenstall, Manchester (gr. Mr. Schill), sent a fine form of Lælio-cattleya × Schilleriana, in which the sepals and petals had a slight tinge of rosy lilac.

Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. Young), sent two splendid cut spikes of Lælio-cattleya × elegans, cut from the same plant, also good flowers of Lælia crispa and Masdevallia macrura.

Reginald Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz), sent Cypripedium × Eyermanianum var. Hermione.

Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, exhibited two handsome forms of Lælio-cattleya × Clonia, L.-c. × callistoglossa ignescens, Cattleya × Atalanta, and Odontoglossum Pescatorei Harrisianum, the latter a handsome form with branching inflorescence and well-shaped flowers, spotted with purple in the middle of the sepals and petals, to which an Award of Merit was given.

Messrs. Hugh Low & Co., Upper Clapton, received a Bronze Banksian Medal for a good group, comprising some fine forms of Oncidium Papilio, O. Lanceanum, O. luridum, O. Jonesianum, Dendrobium veratrifolium, Cattleya Rex, C. Warscewiczii, C. Gaskelliana, C. Eldorado, C. bicolor, Cypripedium Charlesworthii, C. tonsum, C. × macropterum, C. × Charles Canham, &c.

Messrs. F. Sander & Co., St. Albans, also staged a good group, comprising plants of the handsome Sobralia xantholeuca, Cattleya Warscewiczii, Bifrenaria aurantiaca, a fine well-flowered plant of Odontoglossum Krameri, O. crispum, O. Schlieperianum, O. Pescatorei, O.

bictoniense album, and a form of Cypripedium × Cybele, called C. × Lawrenceo-Druryi, with ivory-white flowers, tinged with green and lined with rosy purple.

At the meeting held on August 24th the Orchids exhibited were comparatively few in number, the most prominent feature being a splendid spike of the giant Grammatophyllum speciosum, from the collection of Sir Trevor Lawrence, a plant which has not previously appeared at the Drill Hall.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking, sent a fine inflorescence of Grammatophyllum speciosum, nearly seven feet long, and bearing about seventy flowers and buds. It was awarded both a Gold Medal and a First-class Certificate. He also sent an attractive hybrid called Lælio-cattleya × Janet.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), sent Lælio-cattleya × Juno, a remarkable hybrid derived from Lælia grandiflora (majalis) ♀ and Cattleya Mossiæ ♂, with pale rose sepals and petals, and the lip rather darker, with an orange throat veined with cream colour. It received an Award of Merit.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), exhibited the rare Masdevallia trinema (Lowii), and the pretty Lælio-cattleya × Andreana.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), sent Cypripedium × gracile, derived from C. Haynaldianum ♀ and C. × Swanianum ♂, Lælio-cattleya × Ruby Gem (C. Lawreceana ♀ × L.-c. × elegans ♂), and L.-c. × Radiance (L. purpurata ♀ × C. Dowiana ♂), clearly a form of the hybrid previously called L.-c. × Sir William Ingram.

Messrs. James Veitch and Sons, Chelsea, staged a small group of choice Orchids, to which a Silver Banksian Medal was given. It included the handsome Lælio-cattleya × Nysa, L.-c. × Parysatis, L.-c. × Proserpine superba, Cattleya × interexta, Cypripedium × melanthum (C. × Hookeræ ♀ × C. Stonei ♂), and C. × Janet.

Messrs. F. Sander & Co., St. Albans, exhibited Catasetum fimbriatum, Lælio-cattleya × amanda, L.-c. × Robin Measures (L. xanthina ♀ × C. granulosa ♂), L.-c. × Sanderæ (L. xanthina ♀ × C. Dormaniana ♂), and an unnamed hybrid between Lælia pumila and Cattleya Harrisoniana.

Messrs. Hugh Low & Co., Upper Clapton, exhibited a good form of Lælio-cattleya × Canhamiana, L.-c × Harrisoni-præstans, and Cypripedium × Alfred Hollington.

Mr. W. Bull, Chelsea, exhibited the handsome Goodyera Rollissoni, to which an Award of Merit was given.

## CYPRIPEDIUM × SIAMENSE.

ANOTHER stage has now been reached in the endeavour to prove the parentage of this natural hybrid, as suggested on page 18 of the fourth volume of the *Orchid Review*. At page 39 of the same volume it is stated that I, having both Cypripedium callosum and C. Appletonianum in flower at the time the suggestion came under my notice, at once made the experiment, of crossing the two species together.

The date of hybridising was January 15th, 1896, two flowers of C. Poyntzianum (identical with C. Appletonianum, *O. R.*, IV., p. 18) being crossed with the pollen of C. callosum. On the 16th December, 1896, the pods were ripe, and the seed sown on a pot of C. × Harrisianum. Now, August 7th, 1897, my gardener, Mr. Poyntz, has shown me quite a crop of seedlings, so that in due time Mr. Rolfe's views stand a very fair chance of being verified.

REGINALD YOUNG.

Sefton Park,
Liverpool.

## ORCHID PORTRAITS.

CYNORCHIS PURPURASCENS, Thou.—*Bot. Mag.*, t. 7551.

DENDROBIUM DENUDANS, D. Don.—*Bot. Mag.*, t. 7548 (7549 on plate, by error).

DENDROBIUM VICTORIA-REGINÆ, Loher.—*Gard. Chron.*, Aug. 21, p. 121, fig. 34.

EPILÆLIA × RADICO-PURPURATA.—*Gard. Chron.*, Aug. 7, p. 83, fig. 23.

GRAMMATOPHYLLUM SPECIOSUM, Blume.—*Gard. Chron.*, Aug. 28, pp. 145-147, fig. 41, 42.

SOBRALIA × VEITCHII.—*Journ. of Hort.*,, Aug. 12, pp. 148, 149, fig. 21.

## CORRESPONDENCE, &c.

W. S. B, Dorking. Probably a light form of Sobralia xantholeuca.

E. A., Wilmslow. Pholidota imbricata, an East Indian Orchid, presumably originally introduced with some plant from that country, although found with Cattleya.

R. Y., Liverpool. Many thanks for the list, which contains some interesting and useful facts.

Photographs received, with thanks. R. E., De B. C., T. I. P., and F. S. & Co.

Mrs. B., N. Devon. A fine form of Cattleya Warscewiczii, with a large and very brilliantly coloured lip. The percentage of natural hybrids in such an importation is almost invariably small.

N. E. H., Devon. We should like to see the inflorescence (not the plant). Such cases occasionally occur, but may not be constant. Time alone can prove this.

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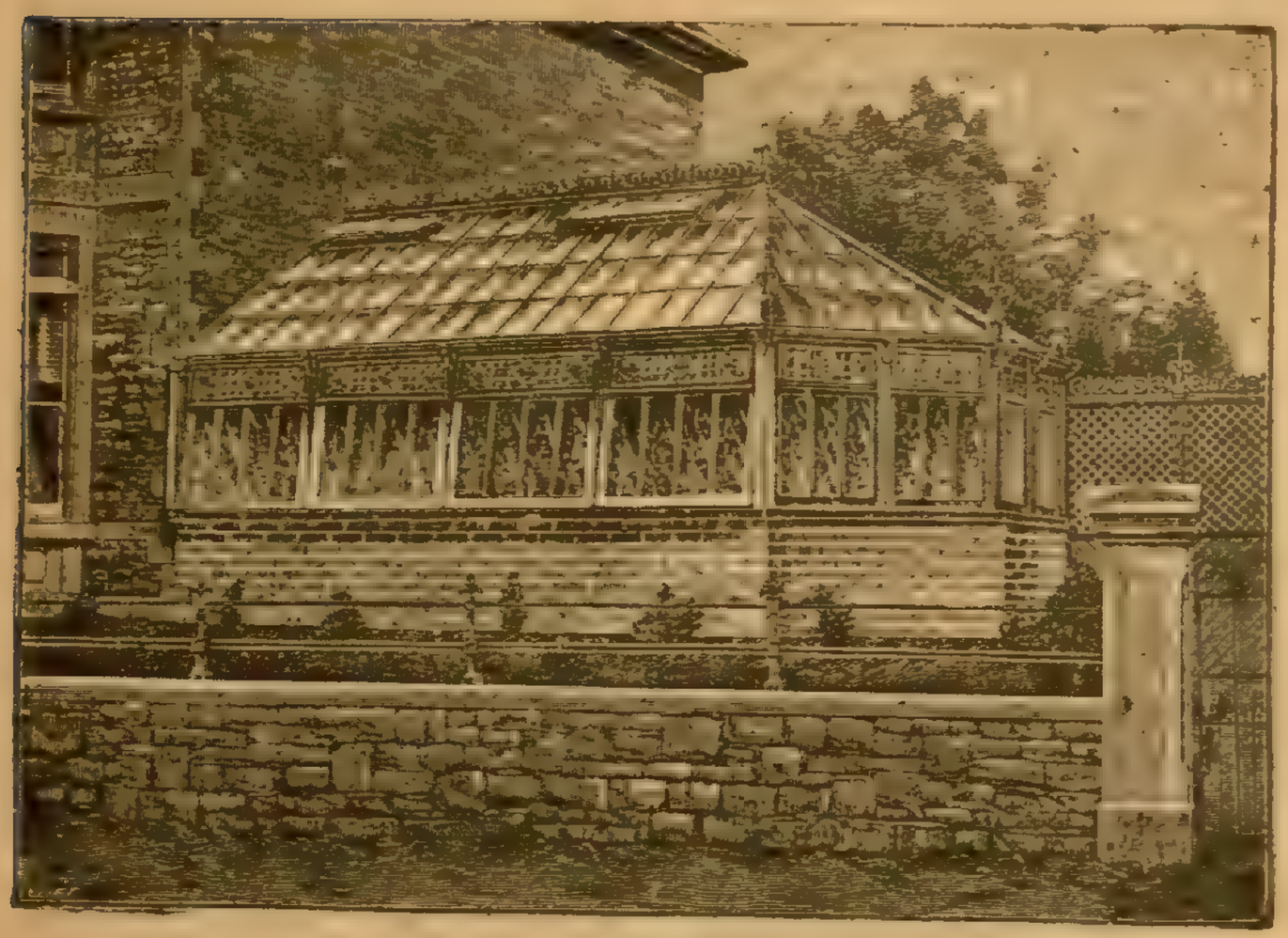

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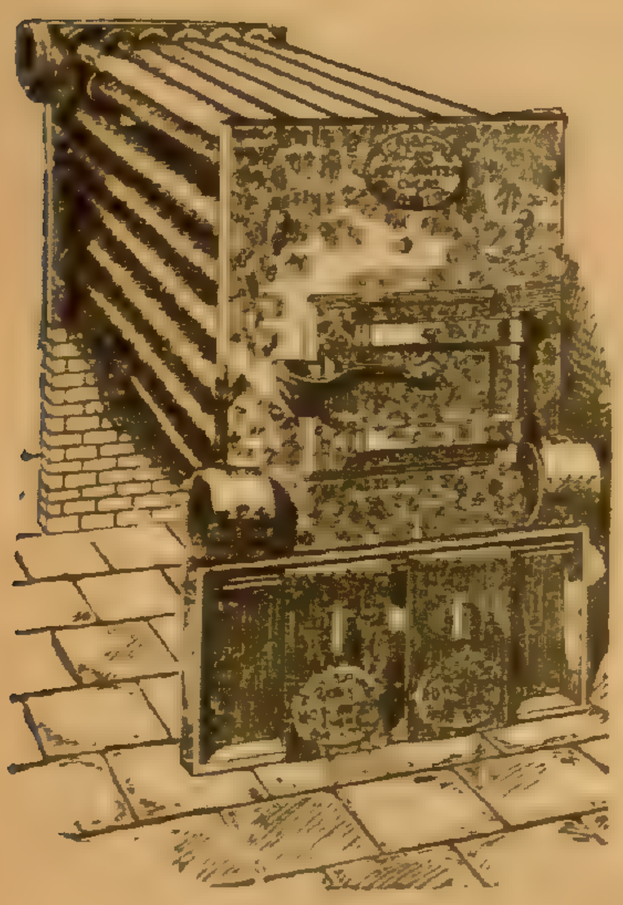

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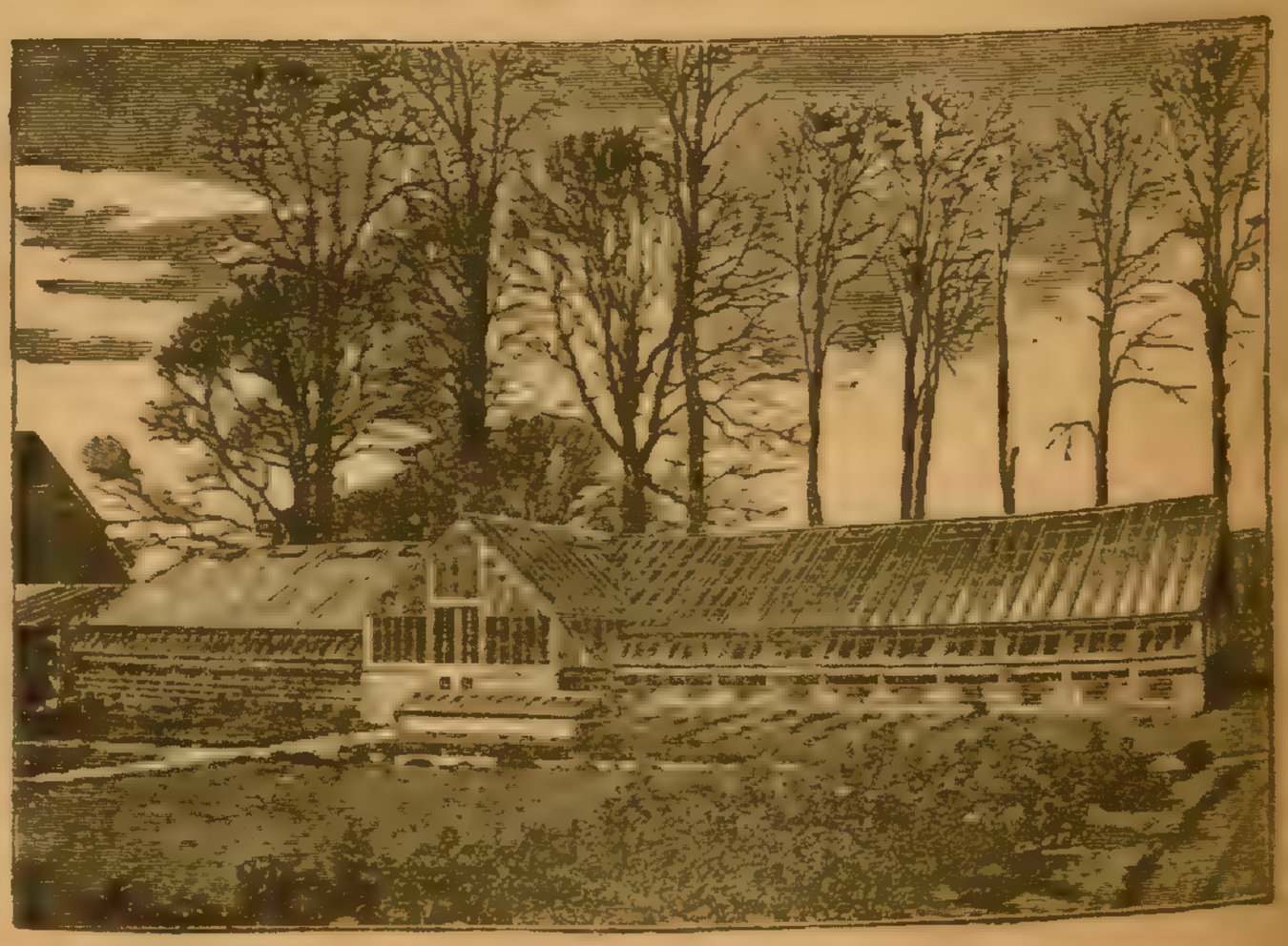

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An Illustrated Monthly Journal,

*DEVOTED TO ORCHIDOLOGY.*

Contents.


| | PAGE |
|---|---|
| Botanical Names ... ... ... | 300 |
| Botanical Orchids at Kew ... ... | 306 |
| Calendar of Operations for October ... | 309 |
| Cattleya Warscewiczii ... .. ... | 296 |
| Correspondence, &c. ... ... ... | 320 |
| Dendrobium taurinum var. amboinense | 304 |
| Dies Orchidianæ ... ... ... | 292 |
| Epidendrum radicans hybrids ... | 301 |
| Hybridist ... ... ... ... | 313 |
| Lælio-cattleya × Cypheri .. ... | 313 |
| Epidendrum radico-vitellinum ... | 314 |
| Lecture on Cool Orchids ... ... | 291 |
| Lissochilus giganteus ... ... | 295 |
| Masdevallia Laucheana ... ... | 303 |
| Manchester and North of England Orchid Society ... ... ... | 314 |
| Notes ... ... ... ... ... | 289 |
| Novelties ... ... ... .. | 299 |
| Cirrhopetalum Curtisii ... ... | 299 |
| Cirrhopetalum pulchellum ... ... | 299 |
| Lælio-cattleya × Broomeana ... | 299 |
| Lueddemannia Sanderiana ... ... | 299 |
| Odontoglossum × Andersonianum var. Bogaerdeanum (Fig. 14) ... ... | 305 |
| Orchid Certificates ... ... ... | 302 |
| Orchid Portraits ... ... ... | 320 |
| Orchids at Bristol ... .. ... | 294 |
| Orchids at the Royal Horticultural Society ... ... ... ... | 317 |
| Orchids at St. Albans ... ... ... | 307 |
| Orchids at Weston-super-mare ... | 297 |


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# THE ORCHID REVIEW.

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## NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during October, on the 12th and 26th, respectively, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

At the former meeting a lecture will be given at 3 p.m., by Mr. C. C. Hurst, of Hinckley, entitled "Curiosities of Orchid Breeding," when a very interesting discussion may be anticipated.

The October meetings of the Manchester and North of England Orchid Society are fixed for the 7th and 21st, at the Coal Exchange, Market Place, Manchester. The Orchid Committee meets at noon, and the exhibits are open to inspection from one o'clock until four.

We learn that Mr. H. A. Burberry has resigned his position as Orchid grower to the Right Hon. Joseph Chamberlain, M.P., at Highbury, and intends to commence business on his own account, offering his services to amateurs of Orchids in the capacity of adviser in cultural matters generally. Mr. Burberry's long experience and abilities are well known to our readers, and we cordially wish him success in his new sphere. An announcement appears in our advertisement columns.

We learn that the well-known collection of Orchids brought together by M. Robinow, Esq., of Didsbury, and E. H. Woodall, Esq., of Scarborough, are to be dispersed, having been acquired by Messrs. Charlesworth & Co., Heaton, Bradford, from whom we have received an illustrated catalogue. Both collections contain many rare and interesting plants, in addition to

the well-known showy things, as, for example, Grammatophyllum speciosum, fine examples of Lycaste Skinneri alba, Cymbidium Hookerianum, and Masdevallia elephanticeps in the former, and in the latter the well-known examples of Vanda cœrulea, Renanthera Inschootiana, Cymbidium Tracyanum, and others which have received awards at the Drill Hall.

Flowers of the dark and richly-coloured Lælio-cattleya × elegans Schrœderiana, to which an Award of Merit was given at the Royal Horticultural Society's meeting on August 10th, are sent from the collection of E. Ashworth, Esq., Harefield Hall, Wilmslow. The front lobe of the lip and apex of the side lobes are of the deepest crimson-purple, and the sepals and petals are also very dark. It was purchased at Mr. Wells' sale, and originally came from Messrs. Sander.

A strong plant of Cattleya Warneri in the collection of Dr. A. W. Hoisholt, Stockton, California, has produced a fine spike bearing the exceptional number of nine well-developed flowers. A photograph of it is kindly sent, and with so many flowers it is not surprising to note a distinct diminution in size upwards, the uppermost bloom being nearly a third smaller than the basal one.

Several other interesting photographs are also enclosed, including a pure white form of Odontoglossum citrosmum with only the crest yellow, a twin-flowered scape of Cypripedium × Ashburtoniæ, a fine form of C. Curtisii, Cœlogyne Massangeana, Oncidum luridum guttatum, Selenipedium caudatum Wallisii with petals twenty-seven inches long, and good examples of Cattleya Trianæ and C. Warscewiczii Sanderiana.

A curiosity sent is a photograph of a plant of Cattleya Mossiæ showing one pseudobulb growing from the apex of another, arising out of the sheath, as if the flower-spike had developed into a growth, which seems a possible explanation of the phenomenon.

The wide range of variation seen in Dendrobium Phalænopsis, and its great value as a decorative autumn-flowering plant, are well illustrated by a series of ten flowers sent by Mr. James Cypher, of Cheltenham, whose success in the culture of Dendrobiums is well-known. No two are alike, and with the exception of the pure white and the darkest forms they almost represent the range of variation seen in this beautiful plant.

A very distinct form of Odontoglossum grande is also sent by Mr. Cypher, which is characterised by the great development of the dark purple-brown markings of the flower, even of the lip, and the ground colour greenish yellow, and thus it appears much darker than the typical form.

Flowers of the very distinct violet-purple Dendrobium Victoria-Reginæ are sent from the collection of T. Statter, Esq., Stand Hall, Whitefield, by Mr. Johnson. Having been so recently imported, it has probably not yet reached its normal development under cultivation, but whatever it ultimately develops into it is sure to be utilised by the hybridist on account of its novel colour.

Flowers of a very fine hybrid Cattleya derived from C. Warscewiczii and C. Loddigesii are sent from the collection of E. Ashworth, Esq., Harefield Hall, Wilmslow. It flowered for the first time a year ago, and the spike is now three-flowered, the petals being over three inches long by nearly one-and-a-half inches broad, and the rest of the flower correspondingly well developed. The plant most resembles C. Loddigesii, but the characters of both the parents are well blended in the flowers, which are light rosy purple in colour, with a large light yellow disc. It is a form of C. × Minucia.

A very fine form of Lælia pumila præstans is sent from the collection of Mrs. Barton, Little Silver, High Bickington, N. Devon. The flower measures five inches from tip to tip of the petals, which are $1\frac{3}{4}$ inches broad, and a small plant bears five of similar size.

## LECTURE ON COOL ORCHIDS.

A LECTURE on "Orchids" was given to the members of the Wolverhampton Gardeners' Horticultural Club on September 7th, by Mr. H. A. Burberry, who treated his subject from the standpoint of gardeners having but small glass accommodation, dwelling chiefly on those kinds requiring but little warmth so far as the hot water apparatus is concerned. After reviewing the situation generally, and pointing out how extremely simple were the wants of those we thoroughly understood, and expressing the opinion that others now known as refractory species, will be managed equally easily when we become more familiar with the condition of their native habitats, he entered fully into the culture of cool Orchids generally, dividing them into two classes, a warmer and a cooler; the former differing from the latter only in requiring more sun heat during summer when they are growing. He also described fully the conditions which should prevail in each department, and enumerated a large number of the most popular and showy species which grow and flourish under the same conditions, thus combining the ofttimes difficult matters of culture and selection in a way very easy to understand. The lecture was greatly appreciated, and a hearty and cordial vote of thanks was accorded to Mr. Burberry at the close.

## DIES ORCHIDIANÆ.

On two different occasions (pp. 196, 226) I have called attention to the new Dendrobium Victoria-Reginæ, and the opinions which have been expressed about it, some of them not quite so flattering as the one which announced its discovery. But all were agreed upon one particular, and that was that the colour—at all events what there was of it—was "blue," "rich dark blue," "cœrulean blue," "decidedly of the blue tint represented by the collector," and it appeared that at last we had really obtained another Orchid of this much desiderated colour. Judge of my astonishment, therefore, to read the remark at page 277—"The colour of the upper part of the segments I should describe as violet-purple—it is certainly not blue." This is the unkindest cut of all, for we could put up with a good deal in a really blue Orchid, even if it "lacks the influence of some of the choicer East Indian Dendrobes to place it in the front rank." Violet-purple, however, is not common among Dendrobiums, and as the plant is not yet fully developed, it may be seen to better advantage later on. And, of course, the hybridist, who is always looking out for something novel in colour, will take it in hand, and if he can succeed in crossing it on to some of the large-flowered, free-growing Dendrobes of the nobile group, or some of the hybrids derived from it, the result is sure to be interesting.

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Talking of blue Orchids reminds me that another "blue Dendrobium" is announced, Dendrobium cœleste, to wit (see page 267). I hope it is more deserving of the title than a certain Odontoglossum to which the same specific name was given. The flowers are said to be entirely dark blue, with the exception of the ovary and spur, which are purple. It is true that they are only half or a third as large as in Dendrobium Victoria-Reginæ, but then that, it was admitted, had some white in the flower. And look at the habitat—"among quite European vegetation; Oaks, Rhododendrons, Azaleas, and Myrtles being its only companions." Why we might almost grow it outside. The altitude is also given with a precision that is delightful in its exactness—8125 feet. Had it been a foot more or less it would probably have been stated. It is true that it is said to grow many hundred miles distant from D. Victoria-Reginæ, which itself is assumed rather than stated to be of Philippine origin, but that is a mere detail. And to think that the two were announced within a fortnight of each other, by the same collector. One might almost exclaim "Blue Orchids are cheap to-day."

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The vexed question of the degeneration of Orchids under cultivation, and the steps which should be taken to prevent it, has come prominently to the front again, and I have read the discussion on the subject with great

interest. It is an acknowledged fact that certain Orchids almost invariably deteriorate in our European hothouses, but the exact reason why is only vaguely understood. Of course we call them bad doers, or blame the artificial conditions under which we have to cultivate them, and in any case make experiments which as often as not hasten their demise, though occasionally the right treatment is hit upon by this means. Messrs. Hébert and Truffaut and Dr. Smee have been attacking the question by means of chemical analysis, and have told us that Orchids in this degenerated condition are deficient in certain elements; which is largely due to the exhaustion caused by the production of flowers, without any means being taken to compensate the plants for the loss, and they suggest that in order to counteract this degeneration, Orchids should receive a mixture of suitable manures, containing the wanting elements—a course of procedure which at all events seems rational.

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Some of our leading growers, however, deprecate the use of manure, at all events for epiphytic Orchids. Mr. Burberry, I notice, at page 262, while expressing the wish that Dr. Smee's labours may be crowned with the success which they deserve, exclaims "But I am mistrustful. I receive the news with gloomy forebodings, for does it not suggest on attempt at manurial aid? If we would keep our plants at their best, let me here advise growers to shun manure as they would poison; give it a wide berth until Mr. Chemist, who is able to tell us the component parts, also demonstrates to us in a practical and successful manner how to re-charge the plants with any particular element they may chance to lack. Beware! do not use it any form until you know perfectly well what you are doing." This is all very well in the abstract, and no one would select his most valuable plants for experimenting upon. But if Mr. Chemist will only tell us what ought to be there but is not, Mr. Cultivator might institute a few experiments with a view of finding out how to get it there, of course selecting some common plants on which to commence operations. On looking up the paper to which Mr. Burberry alludes, "Orchids abroad and at home," I observe that Mr. Rolfe remarks:—"I believe that some Orchids which under cultivation gradually dwindle away are literally starved to death. The necessary amount of food is either absent or is supplied in a form which they cannot assimilate, either of which must be fatal in the end" (*supra*, p. 107). And this seems to be the root of the matter. It is a question not of manure but of food-supply, and it is possible to carry homeopathic principles too far. I note with satisfaction that certain experiments are being made, and hope the results will be duly recorded.

ARGUS.

## ORCHIDS AT BRISTOL.

A SMALL but very interesting collection of Orchids which we have recently had the pleasure of inspecting is situated at 32, Pembroke Road, Clifton, Bristol, the residence of H. Brittan Evans, Esq., a very enthusiastic amateur of these beautiful plants. Here, in three small houses behind his residence, Mr. Evans has brought together a very interesting lot of plants, which he cultivates with great success. Both warm and cool-growing species are represented, and their healthy appearance is a certain indication of the careful treatment they receive, some of the latter class, especially, leaving nothing to be desired in the way of successful culture. In this class of Orchids comparatively little is flowering at this season, but we noted a good Cochlioda vulcanica, Odontoglossum Pescatorei, O. Rossii, early flowers of Sophronitis grandiflora, and good examples of Lælia Dayana and L. pumila præstans. But there is a promise of others to follow, for we observed spikes pushing of the beautiful Odontoglossum Edwardii, O. Sanderianum, Oncidum dichromum, O. crispum, O. prætextum, O. varicosum Rogersii, and others.

In the Cattleya house we noted Cattleya labiata and Bowringiana in a forward condition, also a spike of Catasetum Christyanum not yet out, while in flower were Oncidium Papilio, ten racemes of the beautiful Dendrobium Phalænopsis, and two good plants of Cycnoches chlorochilon. The Cattleyas not in flower were in promising condition, and a plant of C. Trianæ alba was pointed out as of the purest white and good in other respects. A plant of Vanilla planifolia on the wall at the back has not yet reached the flowering and fruiting stage.

In the next house were some good plants of the beautiful Cypripedium Charlesworthii in flower, one of them bearing a twin-flowered scape, a somewhat rare circumstance, though it has been previously recorded. There were also a good C. × Harrisianum, C. × Ashburtoniæ, and C. × Hornianum, Vanda cœrulea, Odontoglossum Krameri, and Oncidium ornithorhynchum. Mormodes pardinum was producing very fine growths.

The plants are grown on open stages, with solid ones some distance underneath, on which sphagnum moss is laid and kept constantly moist, and to this Mr. Evans attributes much of his success. Indeed, one of the chief points to be attended to in Orchid culture seems to be the provision of a suitable atmosphere, and this is secured by careful regulation of the amount of heat, moisture and ventilation given, according to the season and outside conditions. When properly managed, it is wonderful what an amount of pleasure can be obtained out of such a collection, throughout the entire year.

## LISSOCHILUS GIGANTEUS.

THE article at page 268 on the remarkable Grammatophyllum speciosum recalls another gigantic Orchid which has flowered in cultivation on four different occasions, namely Lissochilus giganteus, the largest and one of the most beautiful of West Tropical Orchids. Some plants were brought from the Congo by the late M. Auguste Linden, and one of these flowered in the Burford collection in May, 1888, and was exhibited by Sir Trevor Lawrence at the Temple Show, which enabled a large number of Orchidists to judge of its remarkable character. It had only been in the collection seven months when the event occurred. Since then it has flowered successively in the collections of D. Tod, Esq., Eastwood Park, Giffnock, Glasgow, M. le Duc de Massa, Franconville, France, and Holbrook Gaskell, Esq., Woolton Wood, Liverpool. The species was first discovered by the late Dr. Welwitsch, before 1862 or 1863, in the Angolan province of Golungo Alto, where it is said to be spread over nearly the whole district in wooded spongy bogs, and is occasionally submerged, and afterwards roasted in a soil as hard as a brick.

Some idea of the plant and its habitat may be gathered from the following extract from Mr. H. H. Johnston's work, *The River Congo* :—

"In the marshy spots, down near the river shore, are masses of that splendid Orchid, Lissochilus giganteus, a terrestrial species that shoots up often to the height of sixteen feet from the ground, bearing such a head of red-mauve, golden, scented blossoms, as scarcely any flower in the world can equal for beauty and delicacy of form. These Orchids, with their light green, spear-like leaves, and their tall swaying flower-stalks, grow in groups of forty and fifty together, often reflected in the shallow pools of stagnant water round their base, and filling up the foreground of the high purple-green forest with a blaze of tender peach-like colour . . . . . Clumps of a dwarf Palm, Phœnix spinosa, which bears a just eatable starveling Date, hedge in these beautiful Orchids from the wash of the river, and seem a sort of watermark that the tides rarely pass; but water often leaks through the mud and vegetable barrier, and forms inside the ring of dwarf palms many little quiet lagoons, not necessarily unhealthy, for the water is changed and stirred by each recurring tide."

It was also met with by Mr. Monteiro, at Porto da Lenha, about forty or fifty miles from Banana, the latter place being situated at the mouth of the river Congo, the event being thus recorded :—

"We here found growing in the mud, and with the roots covered by the river at high water, the lovely Lissochilus giganteus in full bloom; we collected some of its roots, which reached England safely, and are now growing in Kew Gardens."—Monteiro, *Angola and the River Congo*, i., p. 82.

What became of the specimens thus alluded to is not on record, so far as we know, but as the species belong to the list of intractables, one can only surmise that they failed to establish themselves. It would be interesting to know what has become of the plants which have already flowered in cultivation. The one in the collection of H. Gaskell, Esq., was mentioned at page 321 of our first volume as grown in an eight-inch pot, in a mixture of rough peat, cow manure, crocks, charcoal, and sand, in a stove temperature, with abundance of water when growing, but kept dust dry when at rest. The spike was $9\frac{1}{4}$ feet high, and bore thirty-six flowers, so that it had not nearly attained the dimensions recorded of the plant in a wild state.

## CATTLEYA WARSCEWICZII.

THE history of this handsome Cattleya was given at page 299 of our second volume, where its identity with the much later C. gigas was pointed out. A recent note by J. A. (*Gard. Chron.*, Sept. 4, p. 154), suggesting or doubt as to the correctness of this determination, therefore calls for a word of comment. The note runs:—"What a beautiful thing Cattleya gigas is! After seeing Warner's *Select Orchidaceous Plants*, 1st number, we cannot think of calling it Warscewiczii!" Now the figure here alluded to (ser. 1, t. 4) is called C. Warscewiczii var. delicata, T. Moore, and represents a plant from the collection of the late Robert Warner, which is said to have been introduced from Brazil (this is erroneous) by Messrs. Backhouse and Son, of York, under the name of C. Trianæ, under which name it was distributed. The earliest note about it (T. Moore in *Proc. Roy. Hort. Soc.*, ii., p. 121) speaks of it as being exhibited in fine condition at a meeting of the Royal Horticultural Society, at South Kensington, in February last, by Mr. Milford, gardener to E. M'Morland, Esq., by whom it was received and grown under the name of C. Trianæ, "under which name" the note goes on to remark, "it is known in many gardens." As a matter of fact this plant is the light-coloured C. Trianæ delicata, and does not belong to C. Warscewiczii at all. Moore also figured the self-same plant as a distinct species, under the name of C. Rollissonii (*Fl. Mag.* i., t. 8). His views on the subject were unfortunate, for three varieties of C. Trianæ which received First-class Certificates from the Royal Horticultural Society, as recorded in the *Gardener's Chronicle* (1868, p. 240), were all erroneously given in the *Florist and Pomologist* (1868, p. 93), as varieties of C. Warscewiczii, as pointed out at page 114 of our third volume. It is unfortunate that these old errors should keep cropping up, but there is a vitality about them which is simply appalling.

## ORCHIDS AT WESTON-SUPER-MARE.

THE collection of Orchids belonging to W. M. Appleton, Esq., Tyn-y-coed, Hill Road, Weston-super-Mare, is a thoroughly representative and very interesting one. Arranged in six houses of modern construction, well adapted to their requirements, the plants are for the most part in thriving condition, and show the skill and ethusiasm which their owner, and his gardener, Mr. Brooks, bring to bear on them. There are many features of interest in the place, but the Orchids are Mr. Appleton's special hobby, and many of the details of culture and hybridisation are attended to by him personally, and with great success.

The structure and arrangement of the houses are always matters of great importance, and we may remark in passing that they were erected by the well-known firm of Messrs. Crispin and Sons, Bristol, and are well adapted to the requirements of the plants. The stages are well arranged, and consist of an open stage on which the plants stand, affording ample provision for ventilation, and a solid one some distance below on which moisture-retaining materials are placed, so as to give the necessary degree of humidity. The iron-work which separates them is furnished at front and back with a circular trough, which is kept full of water, and thus very effectively prevents marauding insects from reaching the plants, a very important matter in the case of seedling plants, which are so well represented here. The ventilation is efficient, and lath roller blinds are used, and with the best results, though it has been found that a few plants burn in bright weather in a southern aspect, and for these canvas blinds are preferable.

Many features of interest were noted during a recent visit, and some of these must now be mentioned. In the Cattleya house were three plants of Cattleya Harrisoniana, bearing an aggregate of eight spikes of bloom, and a plant of C. elongata carried two of its long spikes, one of them with six good flowers. An early plant of C. labiata was also out, and for several years this plant has flowered in advance of the others, which are showing well, as also is C. Bowringiana. A dozen plants of C. dolosa planted on rafts were in thriving condition. A good plant of Lælia longipes alba, pure white except for the yellow on the front lobe of the lip, was flowering well, and a plant of Cattleya Mendelii crossed with Lælia Digbyana carried two fine pods, while an equally good one was borne by C. Warscewiczii crossed with the same species. Oncidum microchilum and several plants of Cypripedium Chamberlainianum were also in flower here.

In the next house were forty flowers of the beautiful Cypripedium Charlesworthii, showing the usual range of variation in colour, C. × Carnusianum with two twin-flowered spikes, C. × regale, a plant of C. ×

Maynardii with three flowers, C. × Harrisianum, C. × Galatea, some good C. × Asburtoniæ, one with a twin-flowered spike, C. Spicerianum, a good batch of C. insigne showing for flower, Epidendrum osmanthum, Oncidium trulliferum, a well-flowered O. ornithorhynchum, O. Harrisonianum, Selenipedium longifolium and S. × Dominyanum, Cymbidium giganteum, Lælia Dayana, a well-flowered Cœlogyne fimbriata, Dendrobium bigibbum, and a series of plants bearing twenty spikes of D. Phalænopsis. A series of twice as many in an adjoining house, including one to which an Award of Merit was given by the R. H. S., shows that this beautiful species is a favourite here. Here also was noticed a batch of young seedlings of Sobralia macrantha × xantholeuca, hence S. × Veitchii.

An adjoining house contained three good plants of Phalænopsis Esmeralda with an aggregate of eight racemes, the true old Cattleya guttata with a ten-flowered spike, C. Eldorado showing for flower, Dendrobium formosum, Catasetum Christyanum, several Oncidium Papilio, Miltonia candida and M. spectabilis Moreliana, Selenipedium × Sedeni with several flowers in abnormal condition, a peculiarity often seen in this hybrid, and Cypripedium tonsum.

In the Cool house there was not much in flower, but we noted a good specimen of Zygopetalum maxillare carrying five racemes, Restrepia maculata, Maxillaria Meleagris, Masdevallia Veitchiana and M. Chimæra Roezlii, Odontoglossum cordatum, O. crispum, and O. × Andersonianum. Here also we saw several seedling Odontoglossums, the result of an experiment with O. crispum, but the pollen parent was unfortunately not recorded. Sophronitis grandiflora crossed with Cattleya Harrisoniana carried a good seed pod.

Two houses are chiefly devoted to seedlings, and a nice healthy lot they are, some five thousand potted off in various stages up to the flowering one, and perhaps as many others still on the seed pots. The great majority are Cypripediums, but there is also a good batch of Cattleyas, and their origin and history is carefully recorded in a pedigree book. A few Thunias, however, were pointed out as a curiosity, for there is no record of any cross with these, and it is thought that they may be the result of some stray capsule produced as the result of insect fertilisation. A useful arrangement which we noted for suspending the seedlings near the glass is a device of Mr. Appleton's. It is a square shallow basket, made of twisted galvanised wire, with divisions to accommodate nine small pots, and a handle by which it is suspended. In this manner a large number of plants can be suspended at a suitable distance from the glass.

We cannot attempt to enumerate the many interesting crosses which have been made, but some of them will doubtless be heard of as they reach the flowering stage. Some are necessarily repetitions of existing hybrids,

as for example a good batch of C. × tessellatum and C. × Ashburtoniæ, some of which have already bloomed, and now one of the former and ten of the latter are showing for flower. These are among the earlier crosses, but others are coming on rapidly and may be expected to yield some good things at an early date.

In one of the seedling houses we noted distinct forms of Cypripedium Godefroyæ leucochilum, both with white and yellow grounds, and four plants of the beautiful Habenaria carnea nivosa in flower. Mr. Appleton certainly derives a large amount of pleasure from his collection, and we may hope that his experiments in hybridisation may yield results commensurate with the pains which he has bestowed upon them up to the present.

## NOVELTIES.

Lueddemannia Sanderiana, Kränzl.—A Columbian species, introduced from the neighbourhood of Medellin by Messrs. F. Sander & Co. It is said to resemble L. Lehmanni, Rchb. f., in general character, but to differ in having cream-coloured flowers, and a white lip with dense purple blotches and spots, and a very dark purple callus. The pendulous spikes bear from twenty to twenty-five flowers.—*Gard. Chron.*, Aug. 28, p. 138.

Lælio-cattleya × Broomeana, O'Brien.—A plant of Brazilian origin which flowered in the collection of Joseph Broome, Esq., Sunny Hill, Llandudno, bearing a general resemblance to some of the finest forms of L.-c × elegans, and chiefly differing in having the petals two inches broad, and the lip nearly entire. The sepals and petals are clear rosy mauve, and the side lobes of the lip white with purple-rose tips, and the broad front lobe rich crimson-purple.—*Gard. Chron.*, Sept. 11, p. 174.

Cirrhopetalum Curtisii, Hook. f.—A pretty little species which recently flowered at Kew. It was collected at Panga, Tenasserim, by Mr. C. Curtis, F.L.S., Superintendent of the Forest Department, Penang, from whom it was received in September, 1895. It belongs to the group having the petals and dorsal sepal ciliate, its nearest allies being C. Roxburghii, Lindl., C. gamosepalum, Griff., and C. concinnum, Hook. f. The habit is creeping, the leaves 4-4½in. long, slightly exceeding the scapes, which bear numerous whitish flowers, under ½in. long, with the dorsal sepal and petals rose, and the lip bright yellow.—*Bot. Mag.*, t. 7554.

Cirrhopetalum pulchellum, Ridl. Mss.—Another small species allied to the preceding, but differing in its smaller, broadly ovoid pseudobulbs, and differently coloured flowers, which are less crowded in the umbel and have longer lateral sepals. It is a native of Singapore.—Hook. f. *Bot. Mag.*, sub t. 7554.

## BOTANICAL NAMES.

THE following might have been written to-day instead of in 1860.

"J. B. will thank the Editor of the *Gardeners' Chronicle* to inform him the rule for terminating the botanical names such as Hookeri, Douglassi, Darwini, &c. Sometimes they are written with one and sometimes with two i's. The latter appears to be incorrect. Hooker latanised would become Hookerus and not Hookerius, and hence the genitive should end in i and not in ii. Proper names ending in y might very properly end in ii in the genitive, such as Lindleii. [The whole system of names is in so confused a state that we can offer no better explanation than that of our correspondent. Nobody in these enlightened days will pay any attention to rules of construction.]"—*Gard. Chron.*, 1860, p. 1062.

"If J. B. will refer to the report of a Committee appointed by the British Association for the Advancement of Science in 1842, to consider of the Rules by which the nomenclature of Zoology may be established on a uniform and permanent basis, he will find the following:—In Latinising proper names, the simplest rule appears to be to use the termination *us*, genitive *i*, when the names end with a consonant; and *ius*, genitive *ii*, when it ends with a vowel. P.G.E. [We only wish those who name plants would *attend* to this very proper and simple rule. But alas!]"—l.c., p. 1081.

"If the rule for Latinising proper names quoted in your last from the 'Report of the Committee appointed by the British Association in 1842' is a fair sample of the code therein proposed, we cannot wonder that it is so lightly esteemed. It says, use the termination *us*, genitive *i*, when the name ends with a consonant; and *ius*, genitive *ii*, when it ends with a vowel. In obedience to this Lindley would make *Lindleyii*; Decaisne, *Decaisneii*; Kirke, *Kirkeii*; Munroe, *Munroeii*; &c.; and on the other hand Bennett would make *Bennetti*; Lobb, *Lobbi*; Potts, *Pottsi*; &c., none of which would, we think, be tolerated. The fact is that there is no practicable rule for such terminations, and euphony is the only safe guide Names are *means*, not *ends*, and rules that lead to embarrrassment defeat the objects for which a nomenclature is intended. J.D.H."—l.c., 1105.

"As I understand the rule for Latinising proper names, the termination *ius*, gen. *ii*, should be substituted for, and not added to a terminal vowel; thus Decaisne would make Decaisnius, *gen.* Decaisnii, &c. Terminal *y* should be treated as a consonant and retained, e.g. Lindley, Lindleyus, Lindleyi. In proper names ending with a consonant the termination *us*, gen. *i*, is added; thus Lobb would make Lobbus, *gen.* Lobbi; Hooker, Hookerus, gen. Hookeri; and to my ear these terminations sound quite as harmonious as Lobbii and Hookerii. If euphony is to be 'the only safe

guide,' I think a glance at our scientific nomenclature will show how little individual taste is to be trusted. Take for instance Abildgardia, Forbesoerinus, Agassizichthys, as examples. If therefore some rule could be generally adopted it would be most desirable, for we must remember that names once correctly given must be tolerated." P.G.E.—l.c., p. 1129.

## EPIDENDRUM RADICANS HYBRIDS.

In compiling the list of hybrids from Epidendrum radicans, given at page 274, one was accidentally overlooked—namely, Epidendrum × radico-vitellinum (*Gard. Chron.*, July 10, 1897, p. 16), raised by Mr. Seden from E. vitellinum and E. radicans, the latter again being the pollen parent. We are now able to give some further evidence bearing on the question, showing that this species may, under certain circumstances, also be used as the seed parent. Messrs. F. Sander & Co. have at St. Albans a little batch of two most interesting hybrids, one derived from Diacrium bicornutum ♀ and E. radicans ♂, the other from E. radicans ♀ and E. Wallisii ♂, and in the latter case the species in question was actually the seed parent. This we are assured is beyond any doubt, as the history of the plant is known and the record book very carefully kept. We have had the pleasure of seeing the seedlings in question—nice little plants, with several leaves—and both lots show the rooting habit of E. radicans, while, so far as comparison is possible in this stage, there is every reason to believe that the records are correct. **Their flowering will be awaited with interest.**

With respect to the difficulty of fertilising Epidendrum radicans with any of the large-flowered Cattleyas and Lælias, we would suggest that there may be a mechanical difficulty in the way, which is not present when the reverse cross is tried. It may well be that the pollen tubes of these larger-flowered species are too large to obtain an entrance through the micropyle of the ovule, and it will be noted that in the one case where E. radicans was the seed parent the pollen parent was an Epidendrum, for which reason we suspect that E. × O'Brienianum and E. × dellense might be obtained from the reverse cross. It is well known that certain species which cross together readily one way cannot be reversed. To take an example outside this particular family, Mirabilis jalapa can readily be crossed with the pollen of M. longiflora, but Kölreuter tried more than two hundred times, during eight successive years, to effect the reverse cross, but utterly failed. Other instances among Orchids could, perhaps, be found and we hope that some of our hybridists will turn more of their attention to this interesting question.

## ORCHID CERTIFICATES.

A VERY important question has come before the Committee of the Manchester and North of England Orchid Society, namely, whether a First-class Certificate should be awarded to every sufficiently meritorious Orchid which is brought before it, irrespective of whether the award has previously been given to the same variety, or not; and as both sides of the question have found adherents we have been invited to offer any suggestions on the subject. It is urged that under the existing system the member who gets his plant in first runs away with the certificate, to the exclusion of others who may have an equally meritorious plant, while if it were given to excellence alone it would be open to every member owning a good thing to get it "Hall-marked," and a value would then attach itself to the plant if it were disposed of when out of bloom. Each member would then have an equal chance of getting a good plant certificated, which is not the case at present, and thus the question affects the exhibits, and consequently the welfare of the society, for under existing circumstances it is obviously useless to send up a variety which has been already certificated. The only point that seems to be urged against the suggested change is that it would have a tendency to reduce the value of the certificate.

It seems to be a question of policy which must be decided by the society itself, but one or two suggestions may help the members in coming to a decision. The very existence of the difficulty shows that Orchids can hardly be dealt with like many other plants. We believe that the First-class Certificate originated as a recognition of superior merit in some particular variety or race of plants, mostly of garden origin, which could afterwards be propagated and widely distributed, and thus anyone might obtain a part of the original stock, and the award, having served its purpose, would not need to be given again. In the case of a natural species which can be progagated rapidly and distributed, the same remarks apply; and to some extent also to that of an importation in quantity of any particular plant, as for example when the Royal Horticultural Society awarded a First-class Certificate to Cypripedium Charlesworthii. That award was a recognition of merit in the species which would appeal to many growers who purchased plants before seeing it. But there are good and poor forms in most species, and the First-class Certificate has come to be awarded in this sense also, and as many Orchids can only be propagated very slowly an enhanced value is attributed to the individual obtaining it which does not apply to one in a neighbouring collection, which may be of equal or even superior merit, yet is precluded from obtaining the Certificate under existing conditions.

The requirements of the case would perhaps be met by a certificate of

merit which could be awarded to every specially deserving subject exhibited, without reference to whether some one else had previously received a similar award for it, much in the same way as a Cultural Commendation is given in recognition of superior culture. But then arises the difficulty of what the certificate should be called. As a First-class Certificate has at present a definite application it might be preferable to avoid that title, though the award should rank as of equal value. It should be an "Award of Merit" only, and the latter title would be very suitable, were it not now applied in a somewhat different sense. At present it seems to be regarded as equivalent to a Second-class Certificate, and to be given only once to the same variety, so that the objections urged against the existing system in the case of the higher award apply here also with equal force.

The question under debate is practically the one raised by the Right Hon. J. Chamberlain at page 133 of our last volume, in connection with the Royal Horticultural Society—namely, the establishment of a "Hall Mark" for choice Orchids, an arrangement which, it was urged, would give to plants which had passed the test an assured and increased value, which in its turn would attract choice Orchids to the meetings, in the hope of gaining the award, and thus the Shows would increase in interest, to the financial benefit of the Society. Whether it is desirable, however, to establish another class of certificate, is doubtful, especially if some alteration of the conditions under which existing ones are granted could be made so as to meet the difficulty. In granting a Cultural Commendation to a deserving subject no question of a previous award is considered, and it is difficult to see why different regulations should govern the award of a Certificate of Merit. The tendency to reduce the value of the certificates, which the suggested new arrangement might have, could easily be met, if necessary, by a slight raising of the standard of merit.

Whatever the decision of the Society may be on this occasion, it seems probable that some change in the direction indicated will be effected in the near future, for, as already pointed out, existing arrangements leave something to be desired, and something must be done to meet the difficulty.

## MASDEVALLIA LAUCHEANA.

A PLANT of this pretty little species is flowering freely in the Kew collection. It is a comparatively recent addition to the genus, being figured and described as M. Laucheana, Kranzl. Mss., in the recent Masdevallia Monograph (*Woolw. Masd.*, with plate). In this work the remark occurs: "I can obtain no information as to its origin or habitat," but some of these particulars I am able to furnish. The species was introduced by Messrs. F. Sander & Co., who flowered and sent it to Kew for determination in

September, 1889, when it was laid aside as a near ally of M. attenuata, Rchb. f. Its habitat, however, was not furnished. In the above work, M. Laucheana is referred to the section Coriaceæ, while M. attenata is placed in section Minutæ, but they are too nearly allied to be thus separated, though it must be admitted that these two sections almost pass into each other. The plant figured under the latter name also does not agree with the original form figured in the *Botanical Magazine* (t. 6273), differing in having a purple-striped perianth. M. Laucheana has also some purple stripes, and longer, deep yellow tails. Their precise relation to each other may be more exactly ascertained in the future.

R. A. R.

## DENDROBIUM TAURINUM VAR. AMBOINENSE.

Among the plants collected in Amboyna by the late David Burke, who died there of cholera a few months ago, is a large Dendrobium, which is apparently a form of the Philippine D. taurinum, for, though differing in colour, it agrees well in other respects. It is now flowering with Messrs. James Veitch & Sons, at Chelsea. The Philippine plant has greenish white sepals, dull purple petals, and a rose-pink lip with some darker markings on the disc, but there is also a variety in cultivation of a much paler colour, a sort of light purplish pink. The present one has the sepals greenish yellow slightly suffused with bronzy brown, the petals deep purple-brown, also the side lobes of the lip, while the front lobe more nearly resembles the sepals in colour. This difference in colour gives it a very distinct appearance. It quite agrees with the original form in habit, attaining a height of five to ten feet, and bearing numerous long racemes at the apex of the pseudobulbs. Thus it is a very stately plant, though too large for general cultivation. Its discovery enlarges the known area of the species.

D. taurinum was originally discovered in the Philippine Islands by Cuming, and sent to Messrs. Loddiges, of Hackney, who flowered it for the first time in cultivation in October, 1842, the specific name being given in allusion to a fancied resemblance in the flowers to the face and horns of a bull. Messrs. Veitch remark of it :—"Although one of the most remarkable of Dendrobes, it is now seldom seen in collections, owing chiefly to the difficulty in establishing newly-imported plants, a circumstance probably due to the situation selected by this species in its native country; this is almost invariably on the Mangrove trees in the swamps skirting the sea-shore, and where, during severe storms, the plants are sometimes washed by the spray. In such places the stems of Dendrobium taurinum often attain a height of ten feet, and produce racemes two feet long." *Veitch Man. Orch.*, iii., p. 79. It evidently requires similar treatment to D. Phalænopsis and others from this region.

R. A. R.

## ODONTOGLOSSUM × ANDERSONIANUM VAR. BOGAERDEANUM.

On May 11th of the present year an exceptionally fine form of Odontoglossum × Andersonianum was exhibited at the Royal Horticultural Society's meeting by De Barri Crawshay, Esq., Rosefield, Sevenoaks, under the

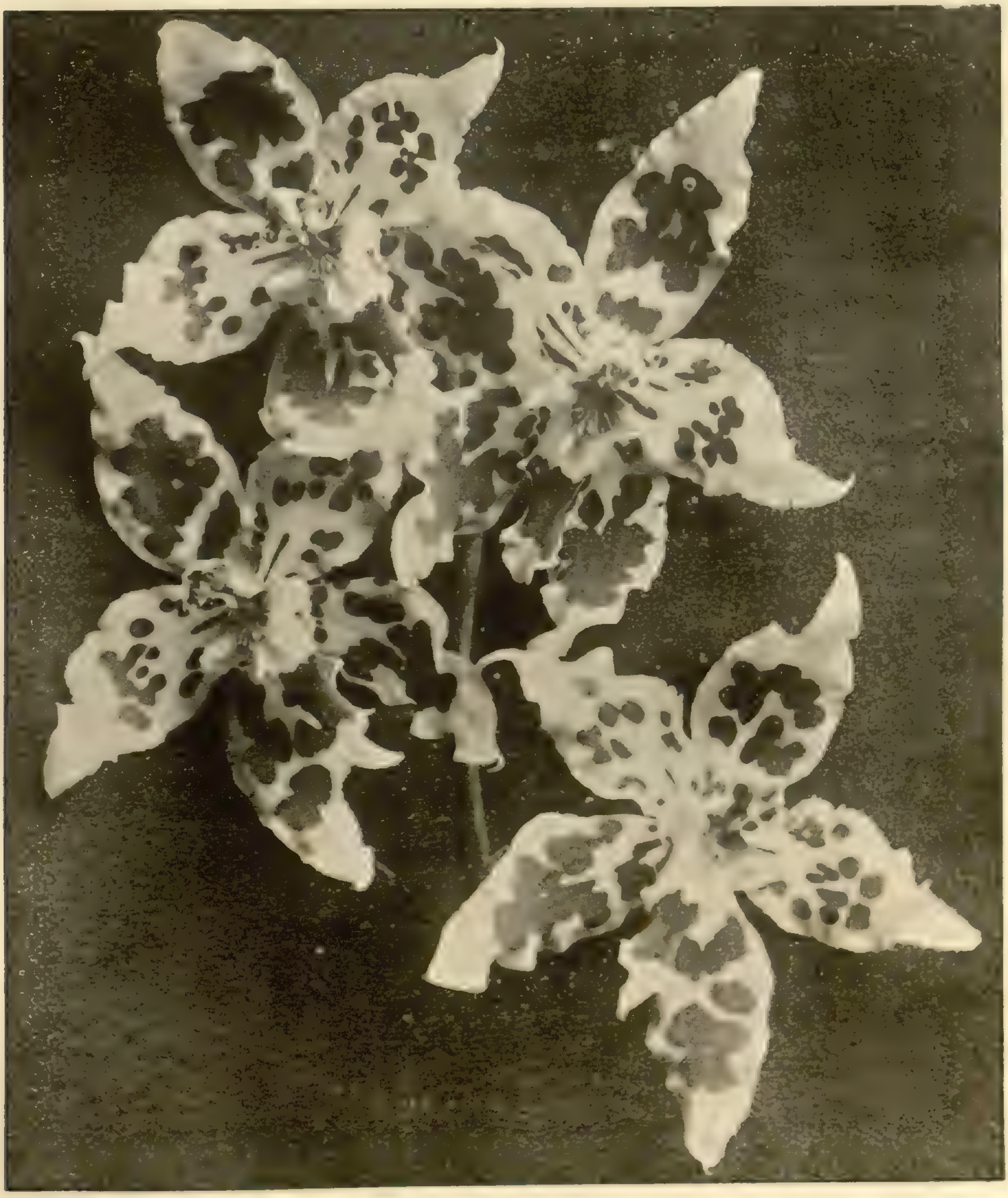

Fig. 14. Odontoglossum × Andersonianum var. Bogaerdeanum.

above name, and deservedly obtained an Award of Merit. A photograph, taken "life size, exactly," has been kindly sent, and is reproduced here under precisely the same conditions, so that our readers will be able to

judge of its merits. It is said to have been introduced by M. A. Bogaerde, in 1895, and to have now flowered for the first time, a small plant in a 60-sized pot, so that it has not yet reached its maximum development. The spike only was exhibited at the meeting, and one can hardly wonder that Mr. Crawshay should hesitate to expose such a plant to the vicissitudes incidental to a journey to the Drill Hall at this season. The flowers are remarkable both for the breadth of the segments and the heavy blotching, and in the latter respect it is doubtful whether its equal has yet been seen. In shape it resembles the original plant of O. × Andersonianum more than many of the forms which have since appeared, but the segments are broader. The colour is light yellow, tinted with rose on the sepals, and the markings deep rich crimson-brown. Mr. Crawshay must be congratulated upon the possession of such an exceptionally fine variety.

## BOTANICAL ORCHIDS AT KEW.

Among the numerous interesting Botanical Orchids flowering at Kew are several Catasetums, as C. fimbriatum, with its expanded and prettily fringed lip, the rare C. Russellianum, C. uncatum, C. macrocarpum, C. Bungerothii, and the handsome natural hybrid between the two latter, known as C. × splendens. The remarkable Cycnoches Egertonianum has also produced another long raceme of its dull purple flowers. A good plant of the Mauritian Cirrhopetalum Thouarsii is interesting as the original species of the genus, and also because of its resemblance to the Burmese C. picturatum. Bulbophyllum occultum is another remarkable Mauritian Orchid, which bears a triangular raceme composed of imbricating bracts arranged in three rows, behind which the flowers are hidden, hence the name. B. barbigerum is again flowering, and can scarcely escape notice, for the slightest movement of the air is sufficient to set the hairy lips in motion. B. odoratissimum and B. apodum may also be included. Trias disciflora is a large-flowered representative of a closely allied genus. Bartholina pectinata is a small South African Orchid which bears solitary flowers whose lip is broken up into numerous radiating segments, and quite unique in its way.

The rare Cyrtopera plantaginea has also flowered, together with the curious little Ornithidium nanum, Liparis reflexa, Pleurothallis picta crowded with flowers, the rare Costa Rican P. platyrhachis, a good specimen of Dendrobium alpestre, and the coral pink Rodriguezia secunda. The graceful Epidendrum purum is producing several panicles of its greenish-white flowers. Mystacidium distichum is a remarkable little species with equitant leaves and small white axillary flowers. Colax jugosus and the rare C. Puydtii may also be mentioned.

## ORCHIDS AT ST. ALBANS.

VISITORS to St. Albans can always find much of interest in the well-known Nurseries of Messrs. F. Sander & Co., where so many plants besides Orchids are now grown, though it is with the latter that we are concerned, and numerous interesting examples are now in flower.

One of the first to catch the eye was the remarkable Arachnanthe Lowii, with a long pendulous raceme of thirty-two dull crimson and green flowers, and two very different orange-coloured ones at the base. The cause of this difference remains a mystery, but it is so constant that it cannot be meaningless. Both kinds of flowers appear equally perfect, at all events so far as the possession of perfect pollen is concerned, and it would be interesting to know whether both are equally capable of being fertilised and producing capsules, for the probability is that the difference is in some way connected with the fertilisation of the flowers, and consequent production of seed.

Of plants flowering in quantity we noticed a fine lot of Odontoglossum grande, some fine forms of the beautiful Vanda cœrulea, one plant carrying three large spikes, some good Cypripedium Charlesworthii, one of which had the dorsal sepal barely under three inches broad, Selenipedium Schlimii, early forms of Cattleya labiata, Miltonia spectabilis Moreliana, and Oncidium tigrinum, the latter just commencing to flower. In a good batch of Stenoglottis longifolia, obtained by division, several were in bloom.

Among Cattleyas were the handsome C. Warscewiczii, C. Dowiana aurea, C. elongata, a lot of C. Bowringiana just commencing to bloom, good examples of Lælia Dayana and L. pumila præstans, Lælio-cattleya × elegans and L.-c. × Schilleriana, the handsome L.-c. × albanensis, in which the combined characters of Lælia grandis and Cattleya Warneri—the former in shape, the latter in colour—are very apparent. The allied Sophronitis grandiflora was commencing to bloom, besides which we observed Epidendrum × O'Brienianum, the old E. cochleatum, E. prismatocarpum, a good E. atropurpureum, E. organense, a very dwarf little plant, E. vitellinum, &c. A fine lot of Lælia anceps was throwing up very strong spikes.

Turning to another group there were fine examples of Odontoglossum Harryanum in bloom, O. × Andersonianum, O. Lindleyanum, the recently-introduced O. aspidorhinum, O. bictoniense and its variety album, the handsome O. Uroskinneri, O. odoratum, O. Krameri, Oncidium incurvum, and O. trulliferum, Miltonia × Bluntii Lubbersiana, M. × Lamarcheana, M. Phalænopsis, and some of the small autumn-flowering forms of M. vexillaria. Several Masdevallias were out, including M. amabilis, M. floribunda, light and dark forms of M. infracta, M. coriacea, M. peristeria, varieties of M. Chimæra, M. Chestertoni, M. erythrochæte, M. ×

Measuresiana and M. × Chelsoni, also the allied Restrepia elegans, Octomeria crassifolia, Scaphosepalum ochthodes and S. punctatum.

Among miscellaneous subjects may be mentioned some good Rhynchostylis retusa, Mormodes pardinum unicolor, Cymbidium ensifolium, the rare Tetramicra montana, Sobralia xantholeuca and S. macrantha, the pretty Maxillaria striata, Lycaste Deppei, Vanda Kimballiana, the rare rose-coloured Cœlia macrostachya, Dendrobium formosum and D. Guibertianum, Sobralia graveolens, Calanthe Masuca. Angræcum Scottianum, Cœlogyne Micholitzii and C. speciosa, the pretty little Sigmatostalix radicans, Lockhartia pallida, &c. A good plant of Vanilla planifolia on a back wall was bearing some nice clusters of fruit.

Many Cypripediums were out, and among those noted were a fine lot of C. insigne just commencing to bloom, C. niveum, the beautiful C. bellatulum album, C. tonsum, C. purpuratum, C. callosum with twin-flowered scape, C. Curtisii, C. Victoria-Mariæ, and numerous hybrids, as C. × Arthurianum, C. × Alcides, C. × H. Ballantine, C. × picturatum, C. × Io, C. × A. R. Smith, C. × Uihleinianum, and many others. There were also the beautiful Selenipedium × Schrœderæ, and S. × Saundersianum, the latter from a fresh batch of several plants raised in the establishment, now beginning to flower.

This brings us to the seedlings, a most interesting lot, now under the care of Mr. Armstrong, who was formerly with Mr. Winn, of Selly Hill, Birmingham. We have not space to mention them in detail, but would remark that the Cattleyas form a large and very healthy lot, and that other groups are also well represented. They are grown on open stages, with beds of coke underneath, which, being kept watered, gives off a constant supply of moisture. The plants are stood upon small inverted pots, and everything is done to ensure a free circulation of air about the roots, which is considered a point of the greatest importance. A number of fine seed-pods shows that the work is being followed up assiduously. It was very interesting to see nice little batches of seedlings between Cattleya Warneri and Lælia tenebrosa, and between the same Cattleya and Lælia grandis. These crosses were made with a view of proving the parentage of the natural hybrids, Lælio-cattleya × Gottoiana and L.-c. × albanense, and, of course, have a value of their own apart from their scientific interest. There are also seedlings of Dendrobium Brymerianum crossed with D. Dalhousieanum, and the sheaths have the characteristic red markings of the pollen parent. This cross has been repeated, as well as the reverse cross, and both are represented by good capsules. Many other interesting crosses could be enumerated, but they must be left over until they reach the flowering stage.

## CALENDAR OF OPERATIONS FOR OCTOBER.

By W. H. YOUNG, Clare Lawn, East Sheen.

WE must now be prepared for any and every kind of weather other than that we could wish, fog, frost, cold winds, and dull cloud-laden skies, all combating against the welfare of our glass-house inmates, which will now more than ever require close study and careful management to fit them to resist the enervating influences of the exceedingly artificial conditions prevailing in these structures during the winter months. In most of the houses we shall be obliged to have resource to fire-heat for the maintenance of the desired temperatures, these should for the various houses be as near the undermentioned figures as circumstances will admit, viz. :—

| | | |
|---|---|---|
| Stove or East Indian house ... ... | Day 70° | Night 65° |
| Cattleya and Mexican houses... ... | ,, 65° | ,, 60° |
| Intermediate house ... ... ... ... | ,, 60° | ,, 58° |
| Cool houses ... ... ... ... ... | ,, 55° | ,, 50° |

The day readings will vary slightly according to whether the outside conditions be bright and warm, or dull and cold, but the night temperatures should be as even as possible with the employment of artificial heat. During moist warm weather the mercury may rise a point or more above the tabulated degree without injury resulting, that is, if a more generous admittance of air through the bottom ventilators be allowed.

Shading from now will be unnecessary for more reasons than one, and the blinds and other appliances should be taken from off the houses, and stored away in a dry condition, also all "stippling" that was placed on the glass for shading purposes should be washed off, taking care during the operation that none of the dirty water runs into the rain-water tanks. Instead of preventing light gaining admittance to the plants, every means must now be adopted to give it a chance of reaching the plants, and to this end all the outside glass should be washed some time this month. The removal of dirt and slime from the outside at this period prevents, to a certain extent, the deposit of such a thick film during a visitation of one of our London fogs. After the outside glass has been done, a commencement should be made inside, and every part should have a thorough cleaning, washing the woodwork, glass, and everything that will add to the cleanliness of the houses, and the appearance of the plants.

It has often been remarked by observant cultivators, that certain Orchids appear to thrive better in dirty tumble-down houses than they do in comparatively new and clean ones, and the question is forced upon us whether it is altogether advisable to clean off the moss-like growth, &c. from the walls and stages. No doubt such accummulations give off and help to maintain moisture in the atmosphere in a more natural manner than

can be obtained from damping a clean surface, for in the latter case the evaporation is quick and consequently spasmodic in its action, providing the surface be not damped frequently. However, we not only have to grow the plants under our care, but we have to set them off to the best advantage for the inspection of their owners and their friends, and to do this, we must have the plants' surroundings clean and tidy, whether it be to the advantage of the latter or not. Dirty glass I should never consider an aid to life and vigor in plants, excepting where heavy shading is needed in the summer, and even then shading of the regulation order is better than dirt.

When a house has been cleaned, the occupants should be arranged so that each one has its due share of light according to its known requirements, favouring those, if any favour be shown, that are still in a state of growth, so that they will in due course develope and mature the growth before its season of activity has expired. If there are a few plants of certain species that are behind in this respect, it is best to remove them to where a trifle higher temperature is kept up rather than raise that of the house they occupy. I am now speaking more particularly of Cattleyas, Lælias, Dendrobiums, &c., and not Cool-house subjects, which in many cases are slowly making growth all through the winter.

Deciduous plants, such as Catasetums, Mormodes, Calanthes, &c., although they have no leaves, will still need light to mature their bulbs, and in the latter case to aid the developement of the flower-spikes. Those in pots may find a suitable place on a shelf near the glass, taking them all down occasionally, and watering those that stand in need of it by immersing the pots to their rims in a pail of water. Deciduous Dendrobiums will also need all the light obtainable, as much now they have lost their leaves, as they did before, but Thunias, when the leaves have fallen away, and the stem-like bulbs have become well ripened, need not be placed in a light position, if room is at a premium, but may be laid under a stage in such a manner that the stems do not lay flat on the earth, and in a position where drip cannot fall on them, for if it does rot will set in.

A large number of the "Slipper" family bloom during the winter, the first of any note, other than that of hybrid origin, being Cypripedium Spicerianum, one of the loveliest "Slipper" Orchids we have, besides being one of the easiest to cultivate if left undisturbed. A warm intermediate treatment is generally advocated for this species, but good results are usually obtainable when grown in the stove. Abundance of water is always needed, though less is required in the winter than during the summer. Other good ones are found in the useful old and new forms of C. insigne, the lovely C. Charlesworthii, purpuratum, and the hybrids Arthurianum, Leeanum, Niobe, and vexillarium, all of which grow best in a moderately cool temperature, as also does C. villosum and Boxallii. Cypripediums

always grow well during the three autumn months, the light being less intense, and the moist atmosphere mostly conducing to this desirable end. More care will be needed now when watering any of the thick-textured Cypripediums or hybrids having any blood of such in their veins, for water lodging in the leaves now does not evaporate quickly enough to prevent damage being done. Those coming under this definition include such as C. Stonei, philippinense (lævigatum), Sanderianum, Rothschildianum, &c., and those of the "concolor" section.

Comment was made in the *Orchid Review* some months ago on the difficulty experienced in growing C. bellatulum, myself being amongst the number of unsuccessful growers. Previous to that, we had placed our plants in a house where Miltonia vexillaria, Maxillaria grandiflora, and other cool subjects were growing, and where one can easily guess the temperature is not at all high, or the light very glaring; now, after being in this position —a hanging one—for over seven months, I think their progress and condition warrants me in declaring that such a position is the right one for them. Of course, careful watering has been enforced, as well as being sparingly supplied, and now a very small quantity given at long intervals will be the rule. The growth made on these plants is wonderfully clean and sturdy, and thrips, which play such havoc with this section, have left them unmolested, greatly to the plant's advantage. The remarks on the other members of this group in a past issue, are still of value, as it would be useless trying to grow them cool, as they come from a lower elevation and consequently a warmer clime.

All plants that are grown in moss alone, such as Aërides, Vandas, Saccolabiums, &c., will now need much less water, and in many cases the moss should be removed, or at least the greater portion of it, or mischief will be done by trying to keep it in a growing condition rather than studying the requirements of the plants it is supposed to benefit. The lovely Vanda cœrulea, that flowers during the autumn, is a very difficult Orchid to deal with during the winter months, if the right place be not found for it. We have a plant here that was hung up in the Phalænopsis house early in the summer, and which from that time has never had any water given it direct, and yet it has made good progress and now has two good spikes of bloom on the one growth. I do not recommend this as the right treatment, but I think it proves conclusively that it is a fallacy to keep on watering a plant to keep the moss growing when it is in a saturated atmosphere. Angræcum Leonis, A. citratum, and other small growing species having leaves of a more succulent character than Aërides or Vandas, will need to be kept a trifle more moist than plants belonging to those genera, but even here it is better to err on the dry side than on the wet. The stately A. sesquipedale thrives best in a lower temperature than that of the East

Indian house, and also where during the winter the atmosphere is drier. A. caudatum, Ellisii, articulatum, and others of this section, being grown in the moist atmosphere of the stove, will not need a large supply of water supplied direct, the former in particular will soon resent having a sodden base. Bulbophyllums, Megacliniums and Cirrhopetalums, will mostly need little water during the winter months, the larger the bulbs and thicker the leaves, the less water will they require once the current season's growth is complete.

Miltonia spectabilis, and its varieties Moreliana, atrorubens, radiata, &c., having gone out of flower, should have very little water given them during the winter months, the moist atmosphere of the stove where they are grown being sufficient, almost, to keep them in good condition. M. vexillaria also, although making growth, should only be watered occasionally, just to prevent the material becoming too dry. The plants should be raised to within sixteen inches or so of the roof-glass, or the growth produced will be of an unsatisfactory nature. M. Clowesii succeeds best in the Cattleya house, and is now in bloom; M. Regnellii, candida, flavescens, Schrœderiana, Bluntii, Lubbersiana, and Peetersiana, succeed along with M. Clowesii, and they all should be kept moderately dry after they have made up their growths.

Large specimens of Sobralias may now have the old reeds that have flowered cut out, to give the young ones more room to grow, and at the same time allow more air and light to gain admittance amongst them. It is still seasonable to repot any of them that require such attention, but as their treatment has been given in a former Calendar, it is only necessary to add that they must be kept clean and free from thrips, and watered very sparingly for the next five months. Anguloas, when they have finished up their bulbs, will only need sufficient water to prevent the above from shrivelling, the same remark applying to the deciduous Lycastes. L. Skinneri and L. Cobbiana are still in an active state, and the compost should be kept in a moist condition until growth is completed. L. lanipes, Barringtoniæ, costata, plana, mesochlæna, and others of a similar character, will also only require sufficient water to keep the bulbs firm. L. tetragona, which in many respects resembles Bifrenaria Harrisoniæ, never seems to like frequent doses of water, agreeing with the latter in that respect as well.

Cattleya Warscewiczii (gigas) and Gaskelliana, having flowered and finished up their bulbs, must be kept dry at the root; however, give water often enough to prevent shrivelling. C. Trianæ has about finished up its bulbs, but will still need a fair amount of moisture at the root, the resting period for this taking place immediately after it has flowered. C. Mossiæ and Mendelii are still growing, and with C. labiata, now in or about to flower, may be repotted at any time when new roots appear from the base

of the newly-made bulb. The latter species often throws out roots a short time previous to the flower buds appearing in the sheath, and if the plant be kept until the flowers are over, these roots have become too far advanced to interfere with, consequently it is better to risk injuring the quality of the flowers, and repot at the former period, than to endanger the life of the plant by repotting afterwards. Since the re-introduction of this grand species it has been found that it appreciates a higher temperature and more shade than most of the other members of the "labiata" group, and those who have not been successful with it, should bear this in mind, and give it a trial. Immediately root action has ceased the plants should be kept very dry, though shrivelling of the bulbs should be avoided as much as possible. C. Warneri commences to grow early in the winter, but if the plants be placed in a light position in the Cattleya house, and kept dry, the progress of these early breaks will be slow and sure. There is no occasion to treat these as one would C. Dowiana aurea, for in the latter case the growths produced now are unseasonable, whilst the former are not.

From now onwards Stanhopeas will require little or no water for weeks together, especially if they are, as they should be, grown in the Cattleya house. Continue to give Cœlogyne cristata liquid manure water, but the time between each watering should now be much longer than during the last two or three months. C. Dayana has not finished growing yet, and will still need liberal treatment, but C. tomentosa and Massangeana have finished growing and should be kept moderately dry. C. Schilleriana, being deciduous, should be treated like the Pleiones after the leaves have fallen away, and the plants, which are growing on rafts, may be hung at the warm end of the Cattleya house. C. sparsa has finished growing and will only want water at long intervals, in fact the majority of these will need only a small quantity of water when in an inactive condition. The object now should be to encourage the majority of Orchids to finish growing and proceed to take a rest, so that when the growing season arrives again they will be in a fit state to go through with it with satisfaction to us and benefit to themselves.

## THE HYBRIDIST.

### Lælio-cattleya × Cypheri.

A VERY distinct and pretty hybrid has been sent by Mr. James Cypher, Queen's Road Nursery, Cheltenham, which owes its descent to the intercrossing of Lælia purpurata ♀ with Cattleya Forbesii ♂. In habit the plant is said to closely resemble the mother parent, and the general shape of the flower points in the same direction, except that the lip is distinctly

three-lobed. The sepals and petals are blush pink, distinctly darker on the margins, and the lip yellow, with numerous rosy purple nerves all over the disc, while the front lobe, and a very broad margin to the side lobes, are strongly suffused with rich rose purple, rather darker on the nerves. Thus the characters of the pollen parent are well developed in the lip, especially in the colour and the prominent nerves of the disc. The pollinia are of the usual intermediate character, but most like the pollen parent, as the additional ones are very small in the flower examined. It is a very promising addition to the group, and has probably not yet attained its full development.

### EPIDENDRUM × RADICO-VITELLINUM.

This is another very interesting hybrid raised by Mr. Seden in the establishment of Messrs. James Veitch & Sons, from Epidendrum vitellinum and E. radicans, the latter being the pollen parent. The plant has slender, root-bearing stems, and thus resembles the pollen parent, except in its dwarfer habit and a slightly glaucous hue, in which the influence of the mother plant is seen. The flowers are borne on a slender erect stem about six inches long, and they measure 1½ inches in their broadest diameter, but at present consist of three sepals and a lip only, the petals being totally suppressed. The colour is bright orange, tinged with scarlet on the margin of the obscurely trilobed lip, which latter organ bears three raised yellow keels on the disc, the two outer ones being rather short. The lip varies somewhat in shape and in the amount of adhesion to the column. The seed was sown in September, 1894, and the first flowers were produced in June, 1897, the plants thus being under three years old. It has probably not yet attained its maximum development.—O'Brien in *Gard. Chron.*, July 10th, p. 16.

## MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

THERE was a falling off in the number of exhibits at the Coal Exchange, Manchester, on August 26th, but thirty-four plants being submitted to the Committee, many of which were of high quality, and three First-class Certificates, eight Awards of Merit, and one Cultural Commendation were given.

The President, William Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), exhibited a very good Cattleya Lueddemanniana (speciosissima), blush pink in colour with two nearly white blotches in the throat (Award of Merit), C. Gaskelliana Nellie, a well-formed light

form (Award of Merit), and a good plant of the pretty Oncidium onustum (Lindl.) with clear yellow flowers (Cultural Commendation).

T. Statter, Esq., Stand Hall, Whitefield (gr. Mr. Johnson), sent a well-grown plant of the magnificent Cypripedium × Mabeliæ var. Lord Derby (First-class Certificate), Lælio-cattleya × Nysa superba (Award of Merit) the handsome Lælia purpurata blenheimensis (Award of Merit), and Cattleya Warscewiczii delicata (Award of Merit).

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Lofthouse), sent the beautiful Cypripedium Lawrenceanum Hyeanum, to which a First-class Certificate was given.

E. J. Sidebotham, Esq., Erlesdene, Bowdon (gr. Mr. Shiner), sent a large-flowered form of Cattleya Leopoldi, which also received a First-class Certificate.

H. Greenwood, Esq., Highfield House, Haslingden (gr. Mr. Spurr), exhibited a good Miltonia spectabilis atrorubens, and Zygopetalum maxillare Gautieri growing on a tree-fern stem, whose fronds set off the flowers to great advantage. Each of these exhibits received an Award of Merit.

S. Gratrix, Esq., Whalley Range (gr. Mr. McLeod), sent Cypripedium × Chapmanii, Gratrix's variety (Award of Merit), C. × calloso-Rothschildianum, and Cattleya × Mary Gratrix (C. Harrisoniana ♀ × C. granulosa Schofieldiana ♂), a pretty hybrid in which the colour of the former and the spotting of the latter were conspicuous.

W. H. Almond, Esq., Alumscar, Blackburn, sent several blooms of Cattleya Leopoldi and a fine C. Gaskelliana, bearing over a dozen flowers.

J. Leemann, Esq., West Bank House, Heaton Mersey (gr. Mr. Edge), sent the new Dendrobium Victoria-Reginæ, Lycaste leucantha, an old but not common species which the Committee wished to see again, Cattleya Dowiana, and other good things.

Mr. James Anderson, Wallace Avenue, showed Cattleya superba, a good light-coloured C. granulosa, C. Loddigesii regularly spotted on the sepals and petals as in the original, and other showy Cattleyas.

At the meeting held on September 9th, the exhibits were again fewer in number, but of excellent quality, the awards including two First-class Certificates, ten Awards of Merit, and one Cultural Commendation.

The President, W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), exhibited a small but choice group, to which a Silver Medal was given. It consisted of some good light and also spotted forms of Odontoglossum crispum, O. triumphans, some good Masdevallia Veitchiana, and a splendid plant of Lælio-cattleya × elegans Cauwenbergiana, to which both an Award of Merit and a Cultural Commendation were given.

S. Gratrix, Esq., Whalley Range (gr. Mr. McLeod), sent the beautiful Cypripedium bellatulum album in excellent condition (First-class Certificate),

and a large well-coloured form of Lælia pumila præstans (Award of Merit).

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Lofthouse), exhibited the beautiful yellow Cypripedium insigne Laura Kimball, a form somewhat approaching C. i. Sanderæ, to which a First-class Certificate was given.

T. Statter, Esq., Stand Hall, Whitefield (gr. Mr. Johnson), sent the handsome Cypripedium × Moensii (Award of Merit), the large and richly-coloured C. × triumphans, Lælio-cattleya × elegans chelsonensis (Award of Merit), the handsome L.-c. × callistoglossa (Award of Merit), and Cattleya × Parthenia.

John Leemann, Esq., West Bank House, Heaton Mersey (gr. Mr. Edge), sent a good plant of Cattleya Dowiana aurea, with a very broad dark lip, and the rare Anguloa eburnea (Award of Merit).

E. J. Sidebotham, Esq., Erlesdene, Bowdon (gr. Mr. Shiner), showed an exceptionally fine form of Cattleya Lueddemanniana (speciosissima), to which an Award of Merit was given.

Messrs. Hugh Low & Co., Clapton Nursery, exhibited Cattleya × Minucia and Cypripedium × Alfred Hollington, each of which received an Award of Merit.

Mr. James Cypher, Cheltenham, sent a curious lemon-coloured variety of Oncidium Jonesianum, to which an Award of Merit was given.

The display of Orchids on September 23rd was very similar in extent and quality to that of the two previous meetings, nine Awards of Merit and one First-class Certificate being granted, and the occasion was further celebrated by the issue of the first Gold Medal yet presented by the Society. In design it is a facsimile of the Silver one.

John Leemann, Esq., West Bank House, Heaton Mersey (gr. Mr. Edge), staged a fine group of good Orchids, effectively arranged among maiden-hair ferns, to which a Silver Medal was given. It contained some good examples of Odontoglossum grande, O. crispum, and other Odontoglots, some well-flowered Cattleyas, and an assortment of other Orchids which flower at this season. The beautiful Phaius × Ashworthianus, in which the characters of P. Wallichii var. Mannii and P maculatus are well blended, received an Award of Merit. A pleasing design in Orchid flowers, with a portrait of Darwin on the obverse, was also exhibited, and to this the Society's Gold Medal was awarded.

The Ven. Archdeacon Rawstone, Balderstone Grange, Blackburn, showed an exceptionally fine Miltonia spectabilis atrorubens, a splendidly grown plant with over a dozen flowers, to which a First-class Certificate was given.

William Bolton, Esq., Wilderspool, exhibited a choice group, including a good Cattleya Eldorado splendens, C. superba with six-flowered spike, a

fine richly-coloured C. Warscewiczii Sanderiana (Award of Merit), and two plants of Cattleya granulosa Schofieldiana, the one a large well-spotted form to which an Award of Merit was given, the other a well-grown example bearing a large number of flowers, which received a Cultural Commendation.

G. Shorland Ball, Esq., Ashford, Wilmslow (gr. Mr. Hay), sent a pale form of Odontoglossum bictoniense and a richly-coloured Vanda Kimballiana, each of which received an Award of Merit.

S. Gratrix, Esq., West Point, Whalley Range (gr. Mr. McLeod), sent the beautiful Cypripedium × Moensii (Award of Merit), C. × calloso-Rothschildianum, and C. × Loewegrenianum (Award of Merit). The latter is a reputed hybrid between C. × Io ♀ and C. Spicerianum ♂, but the Committee doubted the correctness of the record and requested to see it when it flowers again.

W. H. Almond, Esq., Alumscar, near Blackburn, received an Award of Merit for a good Miltonia spectabilis Moreliana.

H. H. Bolton, Esq., Heightside, Newchurch (gr. Mr. Eastwood), exhibited a good Cattleya Lueddemanniana, a brightly-coloured C. Dowiana aurea (Award of Merit), and Calanthe × Eclipse, an interesting hybrid derived from C. Regnieri Sanderiana ♀ and C. veratrifolia ♂.

T. Statter, Esq., Stand Hall, Whitefield (gr. Mr. Johnson), sent Cypripedium × Lady Isabel, an interesting hybrid in which the characters of C. Rothschildianum and C. Stonei are blended.

William Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), sent a fine cut spike of Odontoglossum sceptrum.

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THE display of Orchids at the Drill Hall, James Street, Westminster, on September 7th, was larger than at several of the previous meetings, and the group staged by Messrs. James Veitch & Sons was a large and particularly fine one, including numerous showy hybrids raised in the establishment.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), showed a small group of choice Orchids, to which a Silver Flora Medal was given. It contained a fine example of Cattleya × Hardyana, C. × Ashtoni, C. × porphyrophlebia, an excellent form of Lælio-cattleya × elegans, Dendrobium Phalænopsis, Selenipedium × Hardyanum (S. caudatum ♀ × S. × Ainsworthii ♂), &c.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), sent a very fine Cattleya granulosa superba, and a bright and handsome form of Rhynchostylis cœlestis called Cambridge Lodge variety, an Award of Merit being given to the latter.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Barrel), sent Oncidum panduratum (Rolfe), a Columbian species allied to O. anthocrene, to which a Botanical Certificate was given. The history of the plant is given at page 83 of our third volume.

Major Joicey, Sunningdale Park, Berks (gr. Mr. Thorne), sent a good plant of Acineta Barkeri, bearing two pendulous spikes and an aggregate of forty-five of its waxy yellow flowers. A Botanical Certificate was awarded.

Mrs. Harris, Lamberhurst, Kent (gr. Mr. Huggins), sent the pretty hybrid Cattleya × Miss Harris, in which the characters of C. Mossiæ and C. Schilleriana are blended.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), exhibited Lælia × splendens (L. crispa ♀ × L. purpurata ♂) and a form of Lælio-cattleya × Andreana called Gazelle.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), sent the handsome Cypripedium × triumphans, C. × Lady Isabel (C. Rothschildianum ♀ × C. Stonei ♂), and the fine form of C. × Mabeliæ known as Lord Derby.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Lofthouse), showed the handsome yellow Cypripedium insigne Laura Kimball with two fine flowers.

Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, staged a large and very handsome group, to which a Silver Flora Medal was given. It contained numerous species and handsome hybrids, one of the latter selected for a First-class Certificate being Cattleya × Euphrasia (Warscewiczii ♀ × superba ♂), a perfectly formed flower with rosy-purple sepals and petals and broad richly-coloured lip. Brassia Lawrenceana var. longissima also received a Botanical Certificate. Cattleya × Melpomene (Forbesii ♀ × Mendelii ♂) is a very pretty hybrid which appeared for the first time, the sepals and petals being blush-white, veined with lilac, and the base and centre of the lip yellow with some of the raised purple nerves derived from C. Forbesii. Other handsome things were C. × Wendlandii, C. bicolor, Lælio-cattleya × Epicasta, L.-c. × callistoglossa, L.-c. × Eunomia, fine forms of L.-c. × Nysa, L.-c. × Clonia superba, L.-c. × Stella, L.-c. × Parysatis, a very fine form of Cypripedium tonsum with three flowers, C. Charlesworthii with sixteen, C. × œnanthum superbum with twelve, C. × Carnusianum Veitch's variety, C. × Morganiæ langleyense, C. × Mrs. Canham, C. × Hornianum, C. × Janet, C. × Melanthus, C. × Euryale, some fine C. Curtisii, the rare Angræcum Eichlerianum, Aërides Lawrenceæ, Cycnoches chlorochilon, a pretty Lælia monophylla with sixteen flowers, Renanthera matutina, Oncidum incurvum, O. spilopterum, O prætexum, O. varicosum, Lycaste lanipes, Odontoglossum Uroskinneri, &c.

Messrs. Hugh Low & Co., Upper Clapton, exhibited Cypripedium × Alfred Hollington, together with various other Cypripediums, and Cattleya × Minucia.

Messrs. F. Sander & Co., St. Albans, sent Maxillaria striata, a good plant of Odontoglosum Krameri with twenty flowers, Miltonia spectabilis Moreliana, the handsome M. × Bluntii Peetersiana, Cypripedium × calloso-Rothschildianum, C. × barbato-Rothschildianum, &c.

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At the meeting held on September 21st there was again a good show of Orchids, one First-class Certificate and five Awards of Merit being given.

J. Coleman, Esq., Gatton Park, Surrey (gr. Mr. King), sent a remarkable form of Lælia pumila præstans called Gatton Park variety, to which a First-class Certificate was given. The sepals and petals were white with a suffusion of purplish blue, as also was the front of the lip.

D. M. Grimsdale, Esq., Kent Lodge, Uxbridge, showed a fine Cattleya Harrisoniana major, and an excellent Oncidium Papilio, the latter receiving an Award of Merit.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), also received an Award of Merit for a good Miltonia × Bluntii Peetersiana.

F. W. Moore, Esq, Royal Botanic Garden, Glasnevin, received an Award of Merit for the very rare and striking Lycaste Denningiana, in which the lip is reddish-orange and the sepals and petals green tinged with orange.

W. S. M'Millan, Esq., Ardenholme, Maghull, Liverpool (gr. Mr. Robertson), sent Cattleya × Hardyana alba, a most beautiful form with white sepals and petals, and rich purple-crimson lip with the usual golden veining. It was obtained among plants imported by Messrs. Charlesworth & Co., of Heaton, Bradford.

Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. Young), sent a fine inflorescence of the showy but rather rare Houlletia Brocklehurstiana.

Messrs. Hugh Low & Co., Clapton Nursery, staged a very fine group, to which a Silver Flora Medal was given. It contained some well-flowered specimens of Vanda cœrulea, fine forms of Cypripedium Charlesworthii, C. × Arthurianum, C. × Alfred Hollington, and others, a pretty light form of Dendrobium × Leeanum, Lælia pumila præstans, fine specimens of Odontoglossum grande, O. Harryanum, O. crispum, Oncidium Jonesianum, O. varicosum, Lælio-cattleya × Aurora, L.-c. × Novelty, Cattleya Lueddemanniana, C. Gaskelliana delicatissima, a pretty, nearly white form, C. granulosa Schofieldiana, C. × porphyrophlebia, &c. An Award of Merit was given to Cattleya × Hardyana Lowiæ, a handsome variety with the lip very rich purple crimson in front, and the golden veinings at the sides very distinct.

Messrs. F. Sander & Co., St. Albans, sent a group of choice things, including the beautiful Cypripedium bellatulum album, C. × H. Ballantine, the rare and beautiful Selenipedium × Saundersianum raised in the establishment, some good Odontoglossum grande, Miltonia × Lamarcheana, M. × Bluntii Lubbersiana and M. spectabilis Moreliana, a New Guinea Dendrobium called Gratrixianum, with slender stems and white flowers, having a purple blotch at the base and apex of the ovate lip, D. Guibertianum, &c.

Messrs. Linden, L'Horticulture Internationale, Brussels, received an Award of Merit for Vanda amœna, a supposed natural hybrid between V. cœrulea and V. Roxburghii, with which it is said to have been imported. It was fairly intermediate in character, and the flowers of a bluish-grey, with numerous violet spots on a violet-blue lip.

Messrs. Collins and Collins, Cumberland Park Nurseries, Willesden, showed a group of twenty-four plants of Odontoglossum Pescatorei and a small O. × excellens.

## ORCHID PORTRAITS.

CATTLEYA WARSCEWICZII VAR. MRS. E. ASHWORTH.—*Gard. Chron.*, Sept. 4, pp. 162, 163, fig. 47.

CIRRHOPETALUM CURTISII, Hook. f.—*Bot. Mag.*, t. 7554.

CŒLOGYNE SPARSA, Reichb. f.—*Gartenflora*, Oct. 1, p. 449, t. 1442.

CYCNOCHES CHLOROCHILON.—*Journ. of Hort.*, Sept. 23, p. 285, fig. 41.

EULOPHIA GUINEENSIS, Lindl.—*Gard. Mag.*, Sept. 18, p. 581, with fig.

LÆLIO-CATTLEYA × DIGBYANO-TRIANÆ.—*Journ. of Hort.*, Sept. 9, pp. 244, 245, fig. 34.

PHAIUS × ASHWORTHIANUS.—*Gard. Mag.*, Sept. 4, p. 551, with fig.

SOBRALIA LEUCOXANTHA, Rchb. f.—*Rev. Hort. Belge*, Sept., p. 205, with plate.

TRICHOPILIA SUAVIS, Lindl.—*Rev. Hort. Belge*, Aug., p. 169, with plate. The species here figured is not Trichopilia suavis, Lindl. (which was figured at page 273 of our third volume), but T. coccinea, Warsc.

## CORRESPONDENCE, &c.

**W. J., Hale.** Cymbidium giganteum.

J. H. Cattleya Lueddemanniana is the older and correct name for C. speciossima. It is not constant in its time of flowering, but the spikes appear just as the young growth is finishing. **See vol. iii. p. 272, and iv. p. 70.**

H. W. A good form of Dendrobium formosum.

W. C. Selenipedium × Sedeni has a remarkable tendency to produce abnormal flowers, and the character is also seen in S. × cardinale. It is difficult to assign a reason.

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# NOTICE.

H. A. BURBERRY respectfully begs to notify to the readers of the ORCHID REVEIW that he has just resigned his position as Orchid Grower to the Right Hon. Joseph Chamberlain, M.P., in order that he may place his entire services at the disposal of the Orchid loving public.

Having had a great and varied experience with Orchids and their culture, he proposes paying a visit—or more, according to arrangement—to the establishment of any lady or gentleman in any part of the United Kingdom who may be pleased to accept his services, and to personally demonstrate there on the spot *all* matters appertaining to the well-being of Orchids.

It has been his opinion for a long time past that cultural instructions so given would result in an immense benefit to the amateur and new beginner in Orchid culture, because the effect of his long experience could at once be grasped and turned to good account.

He has therefore the honour of placing himself at their command, and solicits the favour of their patronage. And he will, on request, be pleased to post his List of Fees, which will always be found reasonable and just.

He will also have great pleasure to execute commissions, and will exert his best endeavour to give the highest satisfaction to all who commit their trust to him.

I am,

Yours most sincerely,

Ethel House,
King's Heath,
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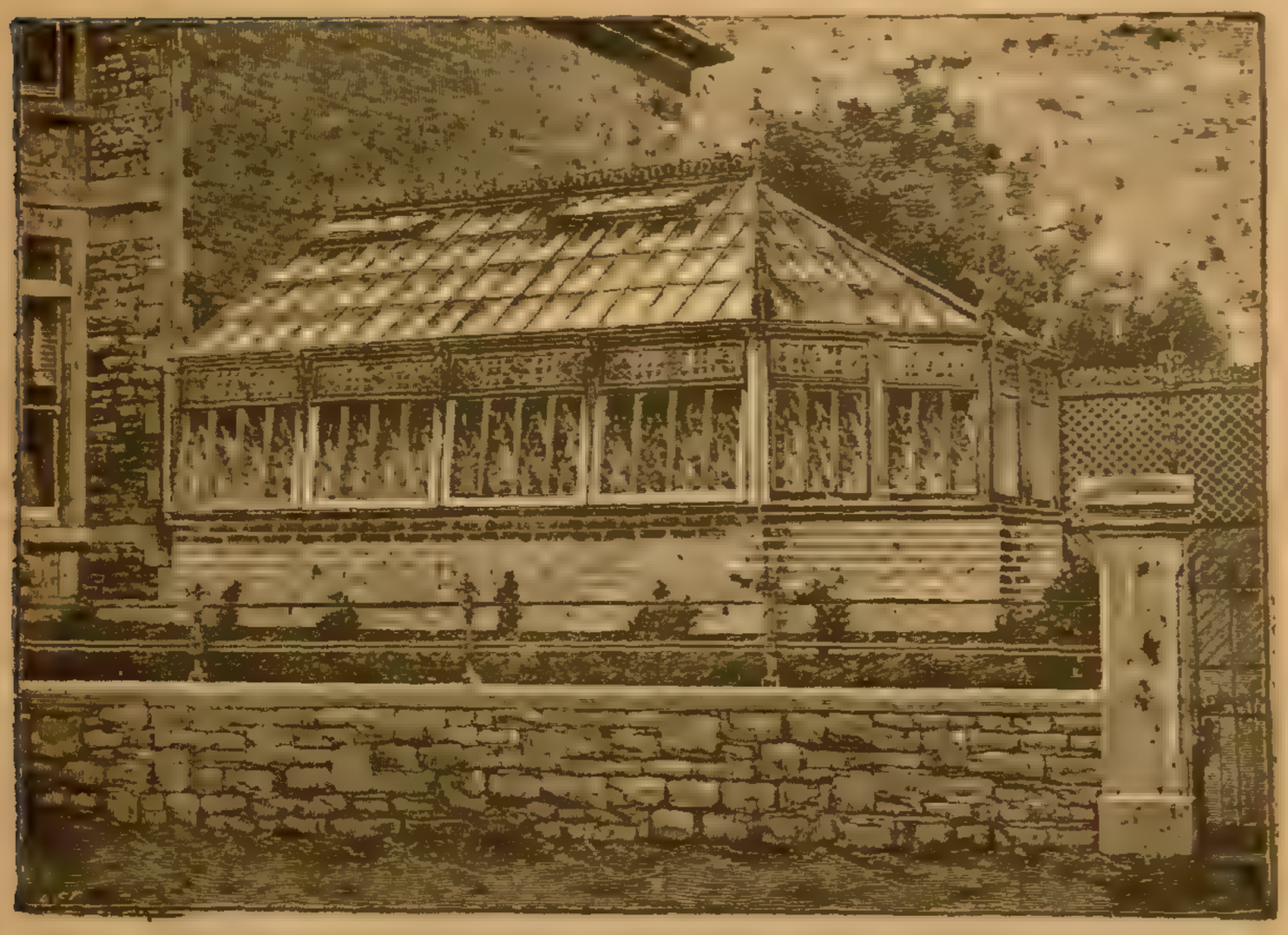

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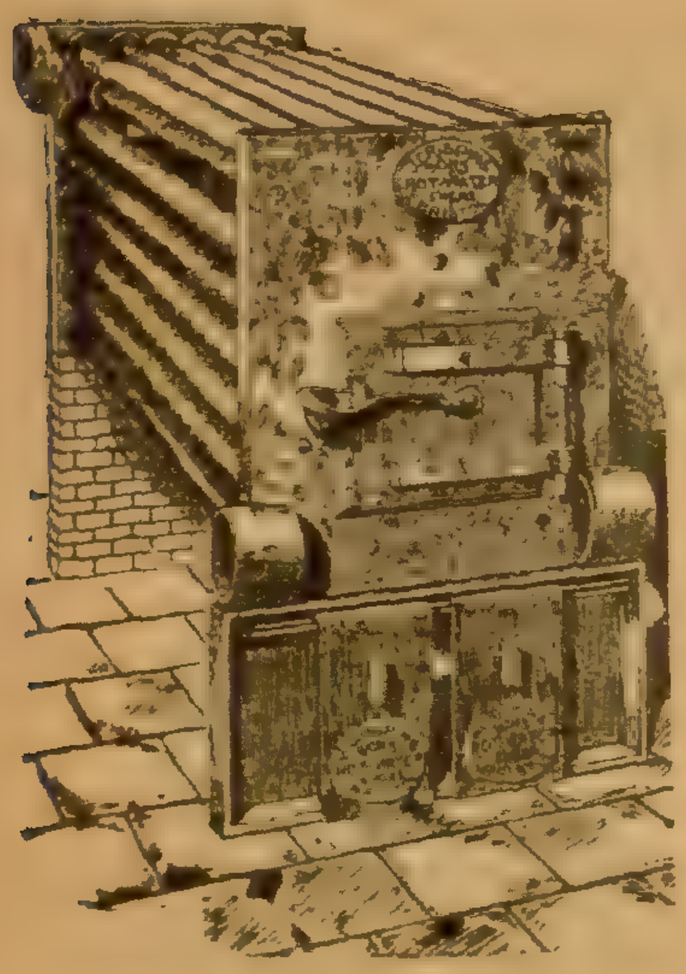

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VOL. V.] NOVEMBER, 1897. [No. 59.

# THE ORCHID REVIEW:

## An Illustrated Monthly Journal,

*DEVOTED TO ORCHIDOLOGY.*

Contents.


| | PAGE | | PAGE |
|---|---|---|---|
| Calendar of Operations for November | 340 | Orchid Breeding, Some Curiosities of | 326 |
| Cattleya × hybrida ... ... ... | 333 | Orchid Certificates ... ... ... | 332 |
| Correspondence, &c. ... ... ... | 352 | Orchid Portraits ... ... ... | 352 |
| Cypripedium nigritum... ... ... | 323 | Orchid Stand, an Improved ... ... | 339 |
| Hybridist ... ... ... ... | 339 | Orchids at the Royal Horticultural Society ... ... ... ... | 347 |
| Cattleya × Miranda ... ... | 340 | Orchids at Uxbridge ... .. ... | 335 |
| Lælio-cattleya × Thorntoni ... | 339 | Orchids, Do they degenerate ? ... | 329 |
| Manchester and North of England Orchid Society ... ... ... | 345 | Orchids in the Law Courts ... ... | 338 |
| Manure for Orchids ... .. ... | 324 | Rhynchostylis retusa (Fig. 15) ... | 337 |
| Notes ... ... ... ... ... | 321 | Vanda × Moorei ... ... ... | 329 |
| Obituary ... ... ... ... | 322 | | |


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# THE ORCHID REVIEW.

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## NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during November, on the 9th and 23rd respectively, when the Orchid Committee will meet at the usual hour—12 o'clock, noon.

The November meetings of the Manchester and North of England Orchid Society are fixed for the 4th and 26th, at the Coal Exchange, Market Place, Manchester. The Orchid Committee meets at noon, and the exhibits are open to inspection from one o'clock until four.

A fine four-flowered inflorescence of the true old Costa Rican Cattleya Dowiana is sent from the collection of W. S. M'Millan, Esq., Maghull, Liverpool. It has the dark lip and much marbled sepals and petals, as shown at t. 5618 of the *Botanical Magazine*, but very similar characters are seen in some of the New Granadan forms grouped under C. D. chrysotoxa, and it is doubtful if any character can be found to separate the plants from the two geographical areas.

A series of twelve different forms of the beautiful Dendrobium Phalænopsis are sent from the collection of A. Darby, Esq., Shrewsbury, ranging from the typical coloured form down to the most delicate blush white. One has a narrow purple stripe down each petal, which gives it a rather distinct appearance. They have been cultivated from two to five years, and each proves constant.

A very pretty Odontoglossum constrictum Sanderianum comes from the collection of H. Brittan Evans, Esq., of Clifton, Bristol, in which the lip is large and very clear white,

A curious malformation of Cattleya labiata is sent from the collection of H. H. Scott, Esq., Tynemouth, in which the lip is divided to the base, and the usual rich colouring absent from the inner adjacent margins of the two divisions. These divisions clearly represent the two petaloid staminodes, unattached to the median petal, which latter is nearly abortive, being only represented by a small petaloid growth, situated in the angle between the lateral stamens and the staminodes—its normal position. The flower is the terminal one in a raceme of three, the others being normal.

Another curious malformation is sent from Glasnevin by Mr. F. W. Moore. In both flowers of the inflorescence the dorsal sepal is like the petals, though a little narrower, and the lateral ones are nearly as broad, more or less folded longitudinally, yellow along the centre and veined like the lip, which latter is normal in shape and colour. The flowers were precisely the same last year, so that the peculiarity appears to be constant.

A plant of the beautiful Cattleya × Choris in the collection of Hamar Bass, Esq., Byrkley, Burton-on-Trent, is now flowering with eleven blooms on one spike, as we learn from Mr. Hamilton. It is a hybrid from C. Bowringiana ♀ and C. maxima ♂, and was described at page 339 of our first volume, so that it has probably now reached its normal development.

A fine example of Odontoglossum grande with two flowers fused together side by side is sent from the collection of W. Thompson, Esq., of Stone. Both flowers are quite perfect. A fine flower of Vanda teres candida is also sent. It is very light in colour, but not pure white.

A flower of Cyprepedium insigne, sent from the collection of R. Ashworth, Esq., Newchurch, near Manchester, has the front of the lip covered with wart-like protuberances, some of them almost spine-like, giving it a most curious appearance. Six others on the same plant are normal in character.

## OBITUARY.

The Rev. Charles Samuel Pollock Parish passed away in his sleep, at his residence, Roughmoor, Somerset, on October 18th, at the age of seventy-five years. His name will be familiar to all our readers in connection with Burmese Orchids, and a few particulars of his career will be interesting. He took his degree of B.A. at Oxford in 1841, and eleven years later he was appointed Indian Chaplain at Moulmein, Burma, and at once commenced the work which has made his name famous. Reichenbach observes that in 1859 Sir William Hooker acknowledged the receipt of some very interesting plants from him, and Dr. Lindley spoke very

highly of some sketches and a few specimens obtained from the same source. At the same time more and more Moulmeinese Orchids appeared in the trade, among which the beautiful Phalænopsis Lowii and a crowd of Dendrobiums were the most striking. The names of the collectors were kept secret, but afterwards it was well known that the plants were sent home by Parish and Colonel Benson. In 1865, Bateman, when figuring Dendrobium Parishii (*Bot. Mag.*, t. 5488), wrote:—"A glance at the recent volumes of the *Botanical Magazine* will show the large number of new and beautiful Orchids that have been secured to the collections of this country through the zeal and enterprise of Mr. Parish, whose eye seems to be ever ready to detect any new forms amid the striking vegetation of the rich country that is now the scene of his missionary labours."

Parish contributed the account of the Orchids to Mason's *Burma* (vol. II., pp. 148-202), where we find this interesting note from his own pen:—"My opportunities of observation were almost unrivalled. Fixed at one station for upwards of twenty years, and having some 150 species growing in my garden, fresh supplies being continually brought in, it was my daily delight to watch their growth, and hardly a day passed on which I did not either draw or examine microscopically some one Orchid or another." (*l. c.*, p. 159.) The species enumerated numbered over 350, which, the author remarked, was a large number for so small an area, as nearly all were obtained from the Tenasserim provinces.

In 1871, he brought home, and presented to Kew, "a beautiful collection of careful water-colour drawings, with analytical sketches, which have proved exceedingly trustworthy," an account of which was given in the *Transactions of the Linnean Society* (XXX., pp. 133—155, t. 27—32), by Reichenbach, who, commenting on their remarkable character, remarked: "Bulbophyllum lemniscatum, however, is the greatest glory of all the discoveries of Mr. Parish." He finally retired in 1878, but after returning home retained an interest in his favourite group. Among the plants dedicated to him may be found a Dendrobium, Cypripedium, Vanda, Cœlogyne, Phalænopsis, Cymbidium, and others. Thus his name is immortalised in the annals of Orchidology, and his work will long be remembered by lovers of these charming plants.

## CYPRIPEDIUM NIGRITUM.

In the Report of the Floral Committee of the Royal Horticultural Society, for July 12th, 1860, the following note occurs, which, I believe, actually refers to C. nigritum, (*supra*, iv., p. 79) and if so, it carries

the history of the species back some twenty-two years:—"CYPRIPEDIUM PURPURATUM, *var.* OBSCURUM:—From Mr. Stone, gardener to J. Day, Esq. Imported from Borneo. The plant had faintly blotched leaves, notched at the end with a spine-like central tooth. The flowers were rather small, the scape villous, the sepals green, veiny, and ciliated with short uncoloured hairs; the petals glabrous, fringed with short ciliæ, dotted with purplish warts below, purplish towards the tips; the lip olive-brown. It was thought to be inferior to several other kinds of similar aspect already in cultivation."—*Proc. Roy. Hort. Soc.*, i., p. 246.

There is also internal evidence that, as on more recent occasions, it came home with C. Dayanum, for on the self-same day that species was also exhibited by Mr. Stone, and "COMMENDED as a desirable and well-marked form of Lady's Slipper." It also was "stated to be a native of Borneo."—*l.c.*, p. 244.

These records are interesting, and explain very well why one has been lost sight of and not the other.

R. A. R.

## MANURE FOR ORCHIDS.

THE important question of manuring Orchids, which has lately come to the front, is not by any means a new one, and the following condensed account of some remarks made by B.T.L., in his "Orchids for Amateurs," in 1885 (*Gard. Chron.* XXIII., p. 486), may be interesting.

Practically, ammonia salts are the main source of nitrogen to the great majority of plants. Every gallon of rain-water contains about half-a-grain of ammonia salts, and the great agricultural chemist, Liebig, calculated that this quantity per gallon is sufficient to nourish a forest of oaks, or any other forest trees. No doubt Orchids watered with pure rain-water would grow and flourish for years, but I doubt whether the supply of ammonia is sufficient for the full development of their powers of growth. Every cultivator knows the advantage of giving potted plants some form or other of artificial manure, but with epiphytes much difference of opinion prevails with regard to its use. Of course, where the sweetness and openness of the compost is of the first consideration, the addition of manure or decomposing material in any form is entirely out of the question, so that all epiphytes have a very meagre diet. It is clear that manure must not be recklessly supplied, as these plants are very delicate feeders. We all know how much flowering exhausts the plants, and the production of fine flowers is the main object of the horticulturist. There are two methods by which Orchids may be stimulated to growth and flowering by artificial manures, and the longer I grow these plants, the more convinced I become that a

due supply of manure is essential to their well-being. There is a danger in giving too gross a diet. You may easily destroy the plants by an excess of manure in any form, but the plants will certainly deteriorate and ultimately die with too little. How can nitrogen, the essential element of all manures, be supplied safely, and supplied in sufficient quantities to get the most vigorous growth? That is the question to be answered. I believe all the most successful growers know this necessity; many have their secrets, which they do not publish to the world, others tell all they know, and their advice is disregarded.

I remember, many years ago, a French Orchid grower boasted that he had a secret which enabled him to excel his brother horticulturists. The boast made him very unpopular, and deservedly, but he never divulged his secret. I do not, of course, know what it was, but, like most secrets, I suspect it was something well known, but disregarded. I can even guess what it was, and I shall now explain the method which he most probably believed to be known only to himself. Although in reality it is well known, only very few practise it or recognise its utility. It consists simply in placing a few pieces of carbonate of ammonia on the piers supporting the pipes, not on the hot water pipes themselves, but near them. The carbonate of ammonia slowly evaporates, and is absorbed by the moisture in the pots or on the leaves of the plants. I use about a pound of carbonate of ammonia in a year in this way, and I believe if I used twice as much in my small house, 20ft. by 12ft., I should not exceed the requirements of the plants. I am quite convinced of its utility, not only on scientific grounds, but from observation. Whenever I have neglected it, the flowers are less developed, poorer in colour and size, and the plants are less vigorous. The manner in which the roots of the plants cling to charcoal, which has an especial tendency to absorb the vapour of ammonia, suggests the advantage of feeding the plants in this manner. The quantity of ammonia I use—generally one or two fragments the size of a walnut or somewhat larger—does not produce a perceptible odour of ammonia, but it is enough to give the plants the extra stimulus they require to grow them vigorously.

It was also pointed out that common salt might be applied as an aërial manure, as it evaporates in the presence of moisture, and certain Orchids which grow near the sea were believed to like it. Count de Buysson had adopted the practice of syringing his plants once or twice a week, or more often when growing vigorously, with a water containing guano or carbonate of ammonia, at the rate of 15 grains to a litre (1¾ pints) of water, and the writer had used it in smaller quantities, and also for watering Cypripediums, with beneficial results. The guano was placed in a muslin bag and soaked in rain-water for 24 hours. We should much like to hear the results of other experiments of this kind.

## SOME CURIOSITIES OF ORCHID BREEDING.

A VERY interesting lecture bearing the above title was given by Mr. C. C. Hurst at the meeting of the Royal Horticultural Society on October 12th. In introducing the subject the lecturer referred to the rapid increase in the number of hybrid Orchids during recent years, and with it the appearance of a number of anomalous forms whose peculiarities it was difficult to account for. An examination of the normal effects of hybridisation, however, and the details of fertilisation generally, might help to explain some of these mysteries.

Hybrids between two distinct species were generally intermediate between their two parents, both in their minute structure and in their external characters. All hybrids between the same two were alike specifically, but, like species, differed in varietal characters, and these varietal differences were found to correspond with the varietal differences of the parents. Cypripedium × Leeanum, the well-known hybrid between C. insigne and Spicerianum, might be taken as an example. All the seedlings derived from such a cross would be C. × Leeanum, whichever species was used as the seed parent—for there was no intrinsic difference in reversed crosses. The various seedlings would not differ from each other more than do the varieties of a true species. It was therefore very important that all should bear the same specific name, and to distinguish those forms which were distinct enough, varietal names should be added. There were many distinct varieties of C. × Leeanum, but the same could be said of C. insigne, one of the parents. The yellow C. insigne Sanderæ, used as one parent, had yielded the light-coloured C. × Leeanum Prospero.

The process of fertilisation was described, the details being largely drawn from Mr. Veitch's experiments with Cattleya Mossiæ. In explaining the essentials of fertilisation as the union of the nucleus of the pollen-cell of the father parent with the nucleus of the egg-cell of the mother, the lecturer alluded to some recent researches into the nature of the nucleus, and the discovery that certain fibres which it contains, called chromosomes, (idants of Weismann) are, just before fertilisation, reduced in number by one half, both in the male and female cell, and cited the opinion of Weismann that in the details of this reduction of the number of chromosomes was the secret both of heredity and variation.

The first curiosities alluded to were several crosses between distinct species which reproduced only the mother parent, and these were termed False Crosses, the suggested explanation being that the results were due to self-fertilisation, as on other occasions the same crosses had yielded true hybrids. The section dealing with hybrids of the second generation,

and indeed several other parts of this exhaustive paper, had to be taken as read. The lecturer, next touching upon Odontoglossum crosses, some of which had confirmed the origin and parentage of certain wild forms which had always been considered by botanists to be natural hybrids. Respecting the influence of foreign pollen on the ripening of the seed, it was remarked that experiments conducted in different years and at different seasons were not conclusive, because sun heat, which was a very potent factor in determining the period of ripening, varied so much at different periods.

Concerning generic crosses, Mr. Hurst pointed out that twenty-six genera had now been crossed together in different ways, and of these a diagram was shown. Some of them were very curious, as those from Epidendrum radicans, which, used as the pollen parent with Sophronitis grandiflora, Cattleya Bowringiana and Laelia purpurata, had in each case exerted a largely preponderating influence on the hybrid offspring. Conversely, Zygopetalum Mackayi crossed with Oncidium, Lycaste, and more than one species of Odontoglossum, had invariably reproduced the mother plant, almost, if not quite unmodified, a fact which was seemingly inexplicable, for in some cases, at least, self-fertilisation was clearly not the cause, and parthenogenesis also seems out of the question. The fertility and sterility of hybrids was also discussed, the latter being attributed more to the male than the female element. The full report in the Society's *Journal* will be awaited with interest by Orchid growers.

Mr. H. J. Veitch, who was in the chair, alluded to the great interest of the subject, and called on Mr. Rolfe for a few remarks.

Mr. Rolfe said that he had listened to Mr. Hurst's paper with the deepest interest. It was a paper crowded with details, many of which, owing to want of time, had had to be omitted, and consequently it was difficult to discuss it at that moment. One or two things, however, had struck him which he might allude to. A paper of this kind was necessarily based, to a large extent, upon published records, and some curiosities had been recorded which, to say the very least, required confirmation. Take, for example, the case of Cypripedium Godefroyae crossed with the pollen of C. niveum, which is said to have yielded examples of both the parents, together with C. concolor, C. bellatulum, C. leucochilum, and about fifty intermediate forms. As to that record, he was extremely sceptical. The results were too improbable, and he felt certain that if the whole history of that variegated assemblage could be traced another explanation could be given. He could not say what it would be, but everyone knew the various ways in which errors might creep in. According to that record one might expect the cross from C. insigne and C. Spicerianum to yield not only various forms of C. × Lceanum, but also

example of both parents together with two or three other allied species. With respect to those cases in which the mother parent only was produced, he suspected that self-fertilisation was the cause. The cross might have been made, but it was well known that a few grains of pollen from the same species would spoil the effect of any cross. Even when applied later the own pollen would outgrow the foreign pollen, and the effect of the latter would be lost. This, however, scarcely explained the case of *Zygopetalum* crossed with *Odontoglossum*, which alone produced the former. The cross had been made several times, and by experts, who had taken care to prevent accidents of this kind, but the result was always the same. It could not be ascribed to parthenogenesis, and thus it seemed to be a remarkable case of the prepotency of one parent.

The subject generally was a very interesting one, and although the hybridisation of Orchids was largely a commercial question, it had a very important scientific bearing. At one time the existence of hybrids in a wild state was denied, and when they began to be recorded certain botanists refused to believe in them, calling them varieties only, and when too intermediate to be ignored they got over the difficulty by considering the supposed parents to be forms of the same species. But hybridists have changed all that, and now several of these wild hybrids have been obtained by artificial crossing, and the judgment of their sponsors has been vindicated. Personally, he could say that the study of artificial hybrids and the way they combined the characters of their parents had taught him a great deal about natural hybrids, and it was remarkable how many had come to light. Only the other day he had to examine a plant which he had not the slightest doubt was a natural hybrid between Vanda cœrulea and V. Kimballiana, which had long been known to grow together. It came home in a batch of the latter, but was obviously different in the foliage, and now the flowers had appeared and were unmistakably intermediate. It had been called Vanda × Moorei, and those who cared to examine it would find it on an adjoining table. To call it a new species was out of the question, and he had no doubt that if Mr. Veitch would cross the two species in question together he would obtain a similar plant. He hoped that hybridists would follow up some of the ideas thrown out from time to time, and he was glad to note that the scientific side of the question had not been lost sight of, for Messrs. Veitch, Sander, and others, had proved the origin of certain natural hybrids by direct experiment. In conclusion, he might say that the work of the hybridist was important commercially and also from a botanical standpoint, in addition to its wider biological interest.

The Chairman, in conclusion, proposed a Vote of Thanks to the lecturer for his very intersting paper.

## VANDA × MOOREI.

It is well known that Vanda Kimballiana and V. cœrulea grow together in Upper Burmah, and now a most interesting plant has appeared in the establishment of Mr. J. W. Moore, Eldon Place Nursery, Bradford, which so clearly combines the characters of the two as to leave no doubt of its being a natural hybrid between them. It came in an importation of the latter, from which it was at once seen to differ, and now it has flowered, and received an Award of Merit from the Royal Horticultural Society on October 12th last. The leaves are rather fleshy, but twice as broad as in V. Kimballiana and nearly flat, measuring 6 to 8 inches long by 5 to 6 lines broad. The scape is $1\frac{1}{4}$ feet long, and only four-flowered at present—the plant being weak and clearly undeveloped. The sepals and petals are lilac, and most like V. Kimballiana in shape, the front lobe of the lip dull purple, obcordately bilobed, and much broader than in V. cœrulea, and the spur 8 lines long, somewhat curved and cylindrical. In other respects the flower is fairly intermediate. It is certainly a very interesting plant, and, judging by the character of its parents, will develop into a very handsome plant. So promising an acquisition should not be neglected by our hybridists, who, I have little doubt, will be able to increase the stock by crossing together the two species in question.

R. A. Rolfe.

## DO ORCHIDS DEGENERATE?

A good deal of attention has recently been paid to the old but important question as to whether Orchids degenerate under cultivation, and in connection with some remarks made by M. Georges Grignan, in the report of the Congrès Horticole de la Société Nationale d' Horticulture de France, the *Gardeners' Chronicle* has initiated a discussion on the subject (Sept. 18th, p. 200). Premising that plants, like men, must terminate their existence at some time or other, whether in their native habitats or under cultivation, it is doubtful, it remarks, whether a huge mass of Cattleya freshly imported does not last as long as a single specimen in the Orchid grower's hands, if it be properly treated, as it would in its native habitat. But in its native home, when the feebleness of old age comes on, some of the stronger pieces on its outer circumference establish themselves as centres, and when the main plant collapses they start anew as fresh plants. This is analagous to what is called degeneracy under cultivation, and one method of preventing the loss of the plants would be to imitate nature, and start with fresh young

specimens. This practice is much resorted to by nurserymen, and there are numberless instances of Orchids which were only imported as one or few specimens, but by propagation under cultivation have become tolerably plentiful, and more healthy to-day than when first imported—Dendrobium nobile nobilius for example.

Even species that one grower considers difficult another manages very well, and those considered impossible to cultivate to-day may be as easily managed ten years hence by those who understand them, as some considered difficult to manage ten years ago are easily grown to-day—Catasetum, Mormodes, and Cycnoches for example. Formerly these were placed on the staging among other Orchids, and watered more or less all the year round, and degeneracy and death were the consequences. Now they receive special treatment, and are well grown and afterwards properly ripened, the period of inactivity serving the all-important purpose of ensuring their doing but twelve months work in one year. Other classes are at present deemed generally unsatisfactory, though here and there sufficient specimens in rude health may be found to redeem them from the list of unmanageables—which generally means plants not understood, or for which no proper accommodation has yet been found.

Cattleya Mossiæ has got the reputation of degenerating, though in some old gardens, where a few Orchids are grown among other plants, it is no uncommon thing to find great specimens of it, and of other "bad doers,". which have been there a great number of years—more often, in fact, than in special Orchid collections. And this points to the fact that over-crowding is one of the causes of so-called degeneracy. Frequently amateurs start well with new houses and plenty of room, and all goes well, but when large quantities are continually being added, the houses begin to get crowded, and degeneracy sets in.

The importance of raising Orchids at home is also pointed out. At present experiments have been limited to raising cross-bred varieties, and these home-raised plants have generally a better constitution, and adapt themselves better to our climate and houses than imported specimens. The question is, then, whether it would not be wise to raise uncrossed or true many of the finer varieties of Cattleyas and other popular Orchids, and thus, while increasing the stock, get also the better constitution of home-raised plants.

Bearing on this question, Mr. W. H. White, Orchid-grower to Sir Trevor Lawrence, has prepared a list of some of the species of Orchids of which the *identical plants* enumerated have been in the Burford collection for many years (*l.c.*, Oct. 2nd, p. 230). Some come under the heading of plants reputed difficult to manage, in some collections at least, and even here other plants of the same species have, in many cases, been lost.

The three oldest plants enumerated are Aërides virens, Odontoglossum crispum, and O. × mulus, received in 1874, and the latter came from Farnham Castle, so that it has been in cultivation still longer. Cattleya Trianæ, Aërides radicosum, Masdevallia Harryana, and M. ignea were added in 1875, and a year later M. macrura, Lælia Digbyana, Odontoglossum coronarium, and Lælio-cattleya × elegans. Plants of no less than forty-five species added in 1877 are enumerated as still in the collection, and among them we note representatives of six species of Odontoglossum, five of Phalænopsis, four each of Cœlogyne and Dendrobium, three of Oncidium and Aërides, and two of Cœlia, Arachnanthe, and Scuticaria, together with Cropedium Lindenii, Sophronitis grandiflora, Anguloa eburnea, Masdevallia Davisii, Restrepia maculata, Zygopetalum Mackayi, Angræcum pellucidum, Cœliopsis hyacinthosma, Lælio-cattleya × exoniensis, &c. These have been uninterruptedly cultivated for twenty years, and among those not specially dated but said to have been in the collection about this period are the following additional ones :—Seven species of Dendrobium, three of Aërides, and two of Angræcum, Odontoglossum and Vanda, together with species of Stanhopea and Sobralia, Cypripedium Fairrieanum, Oncidium ornithorhynchum, Nanodes Medusæ, Catasetum scurra, Miltonia vexillaria, Læliopsis domingensis, Platyclinis glumacea, &c.

Still older, presumably, as their origin is too remote to be traced, are Cattleya labiata and Dendrobiums aureum, nobile, and × Dominii, while Cœlogyne cristata, Thunias Bensonæ and Marshalliana, various Cypripedium species and hybrids too numerous to mention, can only be vaguely indicated as having been in the collection for "many years."

From 1878 date Cattleya Warscewiczii, Lælias anceps and crispa, Angræcum pertusum, Maxillarias venusta and lepida, and Cœlogyne ocellata, while under date 1877 twenty-nine species are enumerated, including Trichopilia coccinea, Masdevallia Veitchiana, Bulbophyllum barbigerum, Vanda suavis, Saccolabium Blumei, Chysis × Chelsoni, Epidendrum vitellinum and three others, three Cirrhopetalums, various Lycastes, Cattleya Mossiæ and chocoensis, and additional representatives of genera previously mentioned.

Over a score date from 1880, including Sarcochilus Fitzgeraldi, Dendrobium bigibbum and Kingianum, Brassavola Perrinii, Brassia Giroudiana, Odontoglossum Edwardii, Angræcum Kotschyanum from the original importation, Cœlogyne Cumingii, Masdevallia tovarensis, &c. Similar numbers appear for the two succeeding years, those of 1881 including Phaius tuberculosus, Lælia Perrinii, Cryptophoranthus Dayanus, and Renanthera coccinea. The latter plant is interesting, as it was in Morse's Nursery many years before it came to Burford, and can be traced to one of the original importations, presumably about 1816.

Angræcum Lawrenceæ is represented by the original plant, and dates from 1883, together with Oncidium Phalænopsis and over a dozen others, while among those added in 1884 we note Mormodes luxatum, Zygopetalum Burkei, Vanda cœrulescens, Ada aurantiaca, Oncidium Marshallianum, and ten others. Habenaria militaris, Cattleya Lawrenceana (the original plant), and five others, date from 1885: Phalænopsis Mariæ, Angræcum Scottianum, Cypripediums concolor and bellatulum, and eight others from 1886, and Grammatophyllum speciosum, Lælia purpurata, Bulbophyllums grandiflorum and longisepalum, Peristeria elata, and five others from 1887. The following year is credited with seventeen additions, among them Leptotes bicolor, Lælias Gouldiana and cinnabarina, and Catasetum barbatum, while 1889 claims Vanda Kimballiana and Amesiana, Odontoglossum grande and Uroskinneri, and Eulophia guineensis. The record now stops except for the single entry of Oncidium Jonesianum, which has been kept from 1893.

We do not observe a single Bollea, Peristeria or Warscewiczella in the list, which is perhaps significant, and yet such proverbially difficult subjects can be kept for fifteen years or upwards under proper treatment, as was shown at pages 277 and 340 of our second volume. We have only been able to summarise Mr. White's list, but it affords an interesting confirmation of a remark made by Sir Trevor Lawrence in the opening speech at the Orchid Conference in 1885:—"I do not see, in the case of most of them, the least reason why they should ever die. The parts of the Orchidæ are annually reproduced in a great many instances, and there is really no reason why they should not live for ever, unless, as is generally the case with them in captivity, they be killed by errors in cultivation." The question, however, is:—How may we avoid these errors in cultivation?

## ORCHID CERTIFICATES.

We are now able to give the decision of the Manchester and North of England Orchid Society respecting the question of Orchid Certificates discussed at page 302.

At the meeting of the Committee on October 21st, after the awards were made, it was proposed by Mr. G. Shorland Ball, seconded by Captain Law Schofield, and carried unanimously—"That in awarding First-class Certificates the Committee shall be guided entirely by the merits of the flower brought before them, without regard to the fact that the same or a similar variety may have already received a First-class Certificate, but no member shall receive more than one First-class Certificate for the same plant."

It was also resolved unanimously, on the motion of Mr. Ball, seconded by Mr. R. Johnson—"That from this date no First-class Certificates be awarded to cut blooms, except the Committee are of opinion that it would have been risky to bring the plant from which such blooms have been taken."

The working of the former rule will be watched with interest, and bearing in mind the special circumstances of the case (which were fully discussed last month), we think that the Committee have made a wise decision.

## CATTLEYA × HYBRIDA.

A VERY interesting Cattleya has appeared in the establishment of Mr. William Brooks, Whitecross Nurseries, Weston-super-mare. It was purchased, with others, at Messrs. Protheroe & Morris' Rooms as C. Leopoldi, and the batch proves on flowering to contain examples of that species, together with the old C. guttata and the subject of the present note, which I believe to be a natural hybrid between C. guttata and C. Loddigesii, and thus a form of C. × hybrida, which will always be interesting as the first hybrid Cattleya raised by hand. Records of the latter plant are rather confusing, but fortunately there is a good figure in existence. It was exhibited at a meeting of the Royal Horticultural Society, on August 11th, 1859, and the *Gardeners' Chronicle* briefly remarks:—"Messrs. Veitch furnished . . . some most remarkable hybrid Cattleyas between C. Loddigesii and C. granulosa" (1859, p. 672). The Society's report is more detailed:—

"HYBRID CATTLEYAS (granulosa × Harrisoniæ):—From Messrs. Veitch and Son. These were exceedingly interesting, as affording the first examples of well-marked, and really showy, new forms of Orchids, produced by hybridising. The present exhibition, consisting of five seedling plants, the flowers of which had a general resemblance to each other, but were slightly different in their markings, was due to the skill and perseverance of Mr. Dominy, the very intelligent foreman employed by Messrs. Veitch & Son, at their Exeter Nursery. The flowers were freely produced, blush-coloured, slightly suffused with the olive green, and showing the spotting of C. granulosa in the sepals and petals, having, moreover, its richly veined purple lip, but varied in the amount of colouring and marking in the different plants. Those numbered 1 and 4 were specially COMMENDED, as being the most beautiful, the others, however, being but very slightly different from them" (*Proc. Roy. Hort. Soc.*, i. p. 71).

The name appeared two years later (July, 1861):—"*Cattleya hybrida*, an interesting and pretty plant, but not equal to many others of this genus.

The flowers were of a very pale rose, flushed with olive green, and the lip freely marked with purple. Another hybrid, with rather lighter flowers, having a less finely marked lip, accompanied this. They were both extremely interesting as hybrid Orchids of direct garden origin."—*l.c.*, ii., p. 619.

In September, 1863, there is a record, under "Special Certificates," of an exhibit from Messrs. Veitch & Son:—"*Cattleya picta*, a hybrid Orchid with dull reddish-stained sepals and petals, spotted with rose, and pallid lip; also *C. hybrida*, shown previously."—*l.c.*, iii., p. 369. In August 1865, under "First-class Certificates," occurs:—"CATTLEYA HYBRIDA PICTA.—Mr. Veitch, Chelsea. This was a cross between C. intermedia violacea and C. guttata. It had terete two-leaved stems, bluntly oblong stout sepals, and petals of a pale purplish tint suffused with green and spotted with deep purple, and a rose-coloured lip, becoming very rich purple towards the tip."—*l.c.*, v., p. 173. In 1881, this C. hybrida picta was figured in the *Floral Magazine* (n. s., t. 473), from one of Messrs. Veitch's plants, where it is recorded as the result of one of Mr. Dominy's earliest efforts at hybridising, being effected as long ago as 1855, or 1856. "It was obtained from C. guttata and C. intermedia, the latter being believed to be the pollen parent," and is as well nigh intermediate between them as can be.

These records, so far as I can see, all belong to the same cross, but the details of parentage are confusing. There is another C. × hybrida (*Gard. Chron.* 1863, p. 602), which, unfortunately, has been confused with the above, derived from C. Loddigesii ♀ and C. Aclandiæ ♂, and also a C. × picturata (Rchb. f. in *Gard. Chron.*, 1877., viii., p. 584), said to be one of Mr. Dominy's hybrids from C. guttata and C. intermedia, which, judging by the description, may be different from C. hybrida picta, though the same two species are recorded as the parents. Returning now to the figure just mentioned, we find a raceme of seven or eight flowers, sepals green with many small brown spots, petals rose-purple with a very broad green band along the centre, nearly half their width, and bearing many brown spots, and the lip with rose-purple side lobes, a deep purple front lobe with a white margin, and some yellow on the isthmus. I can see no trace of either C. granulosa or intermedia in the hybrid, and C. Harrisoniana (Harrisoniæ) does not account for its characters as well as C. Lodigesii. In short, both structure and colour indicate that the latter and C. guttata were the parents.

The plant which appeared with Mr. Brooks is substantially identical in structure, but the sepals and petals are light rose-purple with many darker spots, the side lobes of the lip white, becoming pale yellow in front, and the front lobe deep crimson-purple with a whitish margin.

In shape and size it is much like C. guttata, but in colour and in the ample rounded side of the lip, and the shape of the front lobe, it is much nearer to C. Loddigesii. It would be interesting to know if any plants of the original C. × hybrida are still in existence. Some time ago it was reported as lost, but I have since heard of one example. It is evident, from the foregoing, that the plants varied in colour, some being more like the wild plant than the one figured. Considering that the two parent species grow together, it is surprising that it has not been recorded before. I have brought together the above records in the hope of clearing up the history of the plant. It would be interesting if someone would repeat the cross, and thus perhaps remove the last element of uncertainty in the matter.

R. A. R.

## ORCHIDS AT UXBRIDGE.

A STRIKING feature about the numerous Orchid collections dotted here and there all over the country is that no two of them are ever precisely alike. Even where similar accommodation exists there is a diversity in their composition which is unequalled in any other class of plants. On looking round, one almost invariably finds certain features of special interest. It may be some rarity seldom seen before, "picked up on the roots of some Cattleya," or "sent home by a friend in India," a thriving example of some Orchid reputed to be a bad doer; some novel method of culture, or some curious experiment in hybridising; but the interest is the same. Then, perhaps, it occurs to you that so-and-so ought to be out just now, and you enquire about it, eliciting the reply "we have a plant but we can't do it," or it may be "we used to have it, but the fact is it won't grow here." Your own plant, it may be, grows like a weed, and you impart a few "wrinkles" to your guide, taking it out in return by getting full particulars about something else which you have long been trying to coax into something like health. All of which shows that Orchid culture does not run in anything like a stereotyped groove.

But we commenced with the intention of saying something about the collection of Orchids at Kent Lodge, Uxbridge, the residence of D. M. Grimsdale, Esq., a gentleman who takes great interest in their culture. Cool Orchids are first favourites, and the Odontoglossum house contains a representative collection, including a fine lot of the popular O. crispum. Several were in flower and others throwing up, the most striking among the former being a fine rosy form with very broad segments, and the lip nearly as broad as long, and handsomely marked; and a clear white variety with a cinnamon blotch and numerous small marginal dots on the lip. One

curious little plant appeared as a young growth at the top of an old bulb, and was taken off and potted. Two examples of O. Pescatorei were noted, also O. maculatum, and O. Rossii rubescens, the latter species being represented by several plants on the point of expanding. Sophronitis grandiflora is beginning to flower, one form being almost or quite the variety coccinea. Several plants of Dendrobium chrysotoxum and suavissimum, after making strong growths, are resting here, close to the top ventilators. The inmates of this house generally are in a thriving condition, and it may be noted that all the water used here is taken from the river Colne, which runs close by. It is pumped into the houses so as to get the proper temperature before being used.

The Cattleya house is a similar structure and contains a number of good Cattleyas and Lælias, the former including some C. labiata in bud, and C. Dormaniana in flower, and the latter some good L. anceps and autumnalis throwing up flower spikes, also the pretty little L. longipes. Here also were some good Oncidium Papilio, a plant with which Mr. Grimsdale has been very successful, one flower having measured 2½ inches across the lip.

Separated from this house by a division is a small Show house, where many of the plants are arranged, with ferns, when in flower. It has been found that the flowers last longer there than when left in their respective houses, in a growing temperature and without injuring the plants. Here were several good forms of Cattleya labiata, the pretty little Epidendrum inversum, Oncidium crispum, varicosum and Papilio, Cypripedium Charlesworthii, one form with a very dark dorsal sepal being unusually reflexed at the sides, C. × Harrisianum Dauthieri, and several good forms of C. insigne, including the old typical form, and some very good C. i. Chantinii.

Another house in two divisions is devoted to various warm and intermediate Orchids, and here were several good Dendrobium Phalænopsis in bloom, which however, do not grow with that vigour sometimes seen, showing that the ideal position has not yet been found. Oncidium Lanceanum was also in flower, together with Cypripedium Spicerianum, forms of C. insigne and C. × Leeanum, Selenipedium × Sedeni, Liparis longipes, Pleione præcox, and the rare pale yellow Tricopilia rostrata. Cypripedium Mastersianum and C. venustum were throwing up their scapes.

Dendrobium nobile and various other species and hybrids were resting in a vinery, and Pleione lagenaria was in bud in a frame. Other features might be noted did space permit, but with this we must take leave of this interesting collection.

## RHYNCHOSTYLIS RETUSA.

THE accompanying illustration represents a most beautiful specimen of Rhynchostylis retusa—or rather that form of it usually known in gardens under the name of Saccolabium guttatum—from the collection of Dr. T. R. Jessop, Roundhay Mount, Leeds, which has been sent through Mr. R. Eichel, of Bradford. Last year the plant carried twelve fine spikes, and received a Cultural Certificate from the Committee of the R.H.S. at the York Gala; and this year it has thirteen spikes, and gained the First Prize for a single specimen at the Leeds show. It has been grown and flowered by Mr. Tyson, Dr. Jessop's gardener, for years, and with what success may be seen in our illustration. As

FIG. 15. SPECIMEN OF RHYNCHOSTYLIS RETUSA.

Mr. Eichel remarks that it reminds one of the grand plants exhibited by Mr. Mitchell, gardener to Dr. Ainsworth, at various shows in the North about fifteen years ago, and its portrait is well worthy of reproducing in our pages. Several such examples of good culture have appeared in the *Review*, and have been much appreciated. This group of Orchids, unfortunately, is not as popular as formerly, but examples like the present show that they will amply repay any attention given to them. Nothing is more pleasing than to see a really well-grown specimen of any good Orchid, and their production affords an excellent test of the cultivator's skill.

## ORCHIDS IN THE LAW COURTS.

THE case, at the Manchester County Court, of Ashworth *v.* Wells, for alleged breach of warranty in connection with the so-called Cattleya Aclandiæ alba, was reported at pages 251 and 260. Judge Perry has now given his decision in the matter. His Honour, in giving judgment, said the facts of the case were these :—In June, the plaintiff sold to the defendant an Orchid undeveloped, but warranted by name to the plaintiff as Cattleya Aclandiæ alba. The Orchid was sold at an open auction, at which many Orchid growers were present, and fetched £21. Ultimately the Orchid developed into a common purple Cattleya, value 7s. 6d. No one had ever grown or seen a Cattleya Aclandiæ alba, but Orchid growers were of opinion that such a plant, would, if it existed, be worth at least £50, and would probably fetch a much larger sum. The only question in dispute now was what was the measure of damages consequent on the breach of warranty, that the Orchid was "alba." The defendant was ready to repay the money he received for the Orchid, but the plaintiff claimed a sum equal to the price he might have obtained for such an Orchid if it had proved to be "alba." His Honour, having quoted the authorities on the case, said that he could find no case in which the failure to make a probable profit had been even claimed, much less allowed, as damages for breach of warranty, and inferentially the case of Randall *v.* Roper showed that such a claim would not be allowed. It seemed to him that it should be shown that some actual loss had been sustained, and that it was not enough that there should be some possible loss. If the plaintiff found out at once that the plant sold was not as warranted, he could have his money returned. If he reasonably expended money in the development of the plant, that money ought also to be returned. If he re-sold the plant with the same warranty, and had to settle a claim against him, that also might be included in his damages. But the failure to make an anticipated profit —in this case a highly speculative profit—could not in any opinion be included in the damages naturally consequent on the defendant's breach of warranty. He was further convinced that such anticipated profits could not be recovered as damages for breach of warranty by the judgment in the case of Paterson *v.* Ayre, which was one of the cases considered in Randall *v.* Roper. Under these circumstances he thought the defendant had paid sufficient money into court, and was therefore entitled to judgment with costs. The plaintiff had leave to take the money out of court on payment to defendant of his taxed costs.

We understand that Mr. Ashworth has given notice of appeal, so that we shall now have this interesting case argued before the Divisional Court.

## AN IMPROVED ORCHID STAND.

We have received from Mr. William Murray, The Gardens, Oakwood, Wylam-on-Tyne, a metal stand for Orchids, which has been patented, and is intended to replace the ordinary inverted flower pot. It is made of two flat rings of metal, the smaller one above, supported by three thin rods, and thus allows the air to circulate freely about the plant. Mr. Murray states that after long observation his belief is that more deaths occur from fungoid diseases caused by bad circulation of air among the plants upon the stages than from any other cause, especially when a grower has more plants than he has room for. Great care is usually taken in building a new house to secure proper ventilation, and at the same time prevent draughts, but not always with complete success. When inverted pots are used to elevate the plants, the air in the pots is nearly stagnant, and fungoid growths of a web-like nature occur, which work mischief if they get to the roots of the Orchids, as has been observed, especially among Cattleyas. These metal stands, which are made in various sizes, allow a free circulation of air about the roots. The advantages of open stages have long been admitted, and the present invention is a further development of the same idea. The stand is light, strong, and practically indestructible, in addition to its other advantages, and will doubtless secure a fair trial by Orchid growers.

## THE HYBRIDIST.

### Lælio-cattleya × Thorntoni.

We have now a third hybrid from the remarkable Lælia Digbyana to record. The previous ones were raised by Messrs. James Veitch & Sons, Cattleya Mossiæ and C. Trianæ being the seed parents. The present one was raised by T. W. Thornton, Esq., Brockhall, Weedon, Cattleya × Gaskelliana in this instance being the seed parent. The cross was made in August, 1891, the seed was sown in the July following, and now the first flower has appeared. As would naturally be expected, it bears a considerable resemblance to its two predecessors in shape and in the beautifully fringed lip, but whereas L.-c. × Digbyano-Trianæ is decidedly darker in colour than the original L.-c. × Digbyano-Mossiæ, this one is as much lighter, and may be described as delicate blush-pink, with a pale lemon yellow throat to the lip. The flower is rather smaller than in the two previously mentioned, which, however, is not to be wondered at, as the plant is only five years old and still small. When it becomes stronger the flowers will probably equal those of its predecessors,

It is a very beautiful acquisition, and we have much pleasure in dedicating it to Mr. Thornton, who must be congratulated on his success. Some of our hybridists should attempt the cross between Lælia Digbyana and C. Mossiæ Wageneri, or some other albino of the labiata group, in the hope of getting a white hybrid, and we would also suggest C. Dowiana and C. Warscewiczii as species that might yield striking results.

### Cattleya × Miranda.

Another flower of Cattleya × Miranda is also sent by Mr. Thornton, from a plant now flowering for the first time. The history of the hybrid is given at page 80. The present one differs from that originally described in having the front lobe distinctly stalked, the isthmus being half-an-inch long. It is a large and handsome flower, rose-pink in colour, with the front lobe and tips of the side lobes rich purple-crimson, the petals measuring 3 inches long by nearly 1½ inches broad. In general character it can best be compared with C. × Victoriæ-Reginæ, but it is lighter in colour, and of course the parentage is different.

## CALENDAR OF OPERATIONS FOR NOVEMBER.

The climatic conditions of this month are usually of such an adverse and objectionable nature, that the patience and skill of the most talented cultivator is tried to the utmost. Bright frosty weather does not seriously affect the grower, but what troubles him more is the intermittent spells of dull, moist, and oftentimes warmer weather than is seasonable. During a spell of such, it is an exceedingly difficult matter to create a suitable atmosphere in the houses, and damping down and other watering operations have to be carried out in a very careful and judicious manner, or incalculable harm will follow. The thermometer may rise a trifle above the regulation standard, and air must be admitted in fairly large quantities through the bottom ventilators, to assist the heating apparatus in dispelling the superfluous moisture.

There is, however, a much worse phase of bad weather to combat against, and that is fog; not the ordinary ground fog or mist, but one in which nearly all the injurious gaseous products emitted from the innumerable chimneys of our large manufacturing towns are contained, and which in the neighbourhood of the Metropolis, is of the most destructive character imaginable, not only in connection with Orchids, but most plants cultivated under glass. Numerous and varied have been the methods advocated for adoption during a fog to prevent injury overtaking our plants, but few, if

any, are attended with complete success. My experience of ten winters in this district still leaves me lacking a treatment that can by any means be termed perfect, but during this time various methods have been tried, the outcome of which is as follows: keep the plants and the atmosphere as dry as possible, consistent with reason. Admit little or no air, and keep the temperatures at their lowest points, so that undue dryness be not promoted by fire heat. Of course one cannot always have every plant in a state of dryness just as a visitation of fog occurs, for it often happens that a bright day precedes a fog, and one is tempted to make use of the opportunity to do a little extra watering, and the night brings a change of wind attended with our much dreaded enemy. Under these circumstances a little more fire heat will be beneficial to assist the plants in driving off the super-abundant moisture, though in no case should the mercury rise more than a degree or so above the normal standard.

As the year wanes, a gradual decrease in the temperatures recorded in last month's Calendar should follow, being always careful not to employ more fire heat than is absolutely necessary. Too strong an emphasis cannot be laid on this piece of advice, for other conditions being favourable, there is nothing more prejudicial to plant life than excessive fire heat. If by any chance the temperature rises above the needed point by this means, it is not advisable to throw a lot of water about the house to counteract its parching influences, but rather admit a trifle more air, always through the bottom ventilators. This course could not, however, be followed if the outside conditions are not favourable to the admission of air; then one has to be content with turning the valves off, and wait for the temperature to recede.

Where possible, a covering of some description should be used on the cooler houses at night during severe weather, to save as much as possible the use of fire heat. We do not remove the roller blinds from our Phalaenopsis house, for we find a great saving of heat is effected by running them down at night, and also they do, to a certain extent, exclude fog, especially if the latter be not of long duration. I have been informed by one who has proved it to his own satisfaction, that the new lath blinds greatly assist in the maintenance of a suitable temperature inside, where they are used at night on the roof, and also that benefit accrues from having the fronts or sides and ends of the houses covered with sections of this valuable adjunct. One great disadvantage in connection with the use of blinds in winter is that during severe frost the material freezes to the rafters, and they have to be either left down until they have thawed, or in the attempt to roll them up, the canvas gets torn. Many a time at a celebrated public garden have I been on the roof with hot water trying to ease the blinds sufficiently to roll them up. A very useful and efficient

material is found in "hop pocketing" or hop sacking. This being in lengths of about twelve feet by three feet wide is easily handled, and being close in texture, and more weighty than the ordinary garden mats, keeps as much frost off the glass, and is not blown off so readily.

Pleiones are amongst the few Orchids that have to be attended to this month. Most of the species are natives of India, being found growing on rocks in mountainous regions, and are commonly known as "Indian crocuses." Few Orchids can be grown so easily, and with so little attention, and amateurs who have to attend to the requirements of their pets personally will find in these willing subjects. Their flowering season extends from the end of September to the middle of November, and one species—P. humilis—blooms in the early spring, consequently with the following species the flowering season is extended to a considerable length, viz. :—P. maculata, P. lagenaria, P. præcox (Wallichiana) and P. humilis. There are two or three other kinds, such as P. birmanica, P. Hookeriana, P. Reichenbachiana, &c., which, however, are not procurable in quantity, and even if they were, little would be gained, as they differ so slightly from the above well-known kinds.

The system adopted here in re-potting them annually, and their subsequent treatment proves such an unqualified success that it deserves a detailed description. Soon after the flowers are over, the peculiar-shaped bulbs are taken from the old soil and freed from all unnecessary old roots and the membranous covering, taking care during the process not to damage the young roots that are probably proceeding from the base of the new breaks. Until everything is in readiness place the pseudobulbs on a little moss in a cool plaee. Pans are the most suitable receptacles, the size depending on the quantity to be potted or the fancy of the grower. Those about eight inches in diameter are used here, as they hold a larger body of rooting material, and consequently do not become dry so soon. Becoming dry is an advantage with most Orchids, but in this case it would be a drawback, for reasons which will become obvious as I proceed.

The pans should be filled with drainage to within an inch-and-a-half of the rim, on which a layer of moss should be placed, to prevent the finer particles of the compost being washed into it. The compost consists of equal parts of good fibrous loam and peat, a little chopped moss, a small quantity of powdered cow-dung, and sufficient sand to keep the whole porous when mixed together. When everything is in readiness, take a bulb, and with a little moss and the old roots form a little ball to aid in fixing the bulb firmly in the compost. Each bulb should be so disposed that the growths as they advance have plenty of room to develop, and when completed will be placed evenly over the surface. The material should be raised well above the edge of the pan and mounded slightly, though not too

conically, or watering them in an early stage without wetting the growths will be a difficult matter. When completed, P. maculata should be placed on a shelf or other convenient position in the Cattleya house, and P. lagenaria and P. Wallichiana in the Odontoglossum house, or a structure having a similar cool, humid atmosphere. The advantage of a shelf is that no water can reach the plants when damping down, and also all the light obtainable is at their service.

For about six weeks after being repotted no water will be needed, but at the expiration of that period the pans should be immersed to their rims in a pail of water, previously ascertaining that it is not colder than the temperature of the house, and then allowed to go again for a similiar length of time before giving them another dip. By the time a fresh application is needed, the roots will have taken hold of the material, and a more frequent application of water will be required, though for some time longer the mode of giving it should be the same. About the end of March our plants are taken from the Cool house and placed on a shelf at the cool end of the Cattleya house, P. maculata occupying a shelf at the warm end. Water in abundance is given all through the summer, and when the bulbs are developing, occasional doses of weak liquid manure is given to aid in the formation of good bulbs. P. humilis does not bloom until early in the year, and now the plants have lost their leaves must be kept dry, until the flower buds swell, when an occasional dip should be given, and after the flowers are over, be treated like the others. It is a Cool species, and may be grown and kept throughout the year in the Masdevallia house.

Lælia pumila, now in bloom, is not only remarkable for its neat and highly-coloured flowers, but also for their large size, compared with the diminutive growths from which they proceed, and a large percentage of the plants produce two-flowered scapes. It is an exceedingly easy Orchid to grow when planted in shallow pans or baskets, in the ordinary Orchid mixture, and hung up on the shadiest side of the Cattleya house, and given a fair supply of water. L. Dayana has just gone out of bloom, but should still be given sufficient water to keep the moss green, as the leaves are liable to turn yellow if the plants are allowed to remain dry long. Also in bloom is L. Perrinii, a somewhat despised, and consequently little grown Orchid, though, to my mind, it is superior to many more commonly grown species. Little water will be needed by this plant for a long time to come, though it should be examined frequently to see that it is not shrivelling. Cattleya Dormaniana, now about to bloom, requires a similar treatment to that afforded L. pumila, inasmuch as the bulbs are so thin they will not stand drought for long. When potting plants of the latter description, a very small portion of peat and

moss should be used, so that the bulb becomes dry soon after watering, and in a condition to receive another dose.

The bright flowers of Lælia autumnalis are now in evidence, and other Mexican species, such as L. albida, furfuracea, Eyermaniana, and Gouldiana are slowly developing their somewhat succulent flower spikes. Basket cultivation suits this section best, for more water is required, by the material becoming dry quicker, than is the case when grown in pans, also more air gains admittance to the roots. Very little water will be needed by them when the flowers have gone over, in fact when the bulbs have thoroughly matured they will go a month or six weeks without water. The spikes of Laelia anceps and its varieties are all well advanced, and in due time will display their lovely blooms. It is a good plan to draw a wet sponge up the spikes now and again to keep them clean, and to prevent the upper bracts from sticking to the flower-buds. Until the flowers are over, the plants must be kept fairly well supplied with water, but afterwards a very small quantity will suffice until growth commences.

Arundina bambusæfolia, now in bloom, is a bright-flowered and graceful foliaged plant, that should be included in all collections having a house with a stove temperature. It may be grown easily in a shady part of an ordinary plant stove, as it does not resent, but relishes being syringed overhead. It should be planted in a mixture of half loam and peat, with a sprinkling of sand and moss added, and from the time it has become established, should never suffer from a lack of water. A. chinensis is a cooler growing species, and is neither so amenable to cultivation, nor produces such handsome flowers as the other species.

Another sparsely-grown Orchid is now in flower here, namely, Scuticaria Hadwenii, which has terete foliage similar to that of Oncidium Jonesianum, but differs from that refractory subject in producing its leaves in the ordinary upright fashion. Plants of this should be grown in baskets in a small portion of peat and a little moss, and suspended in the Cattleya house, where, during its growing season, a very meagre supply of water is needed, and when at rest only sufficient to keep the leaves firm will be necessary. S. Steelei—the "whip-cord Orchid"—is a better known species, its long pendulous cord-like growths always attracting attention, and when it deigns to flower it is doubly attractive, for these are both large and handsome. This species is best accommodated on a piece of tree-fern stem or a teak-wood raft, with a small quantity of material between it and the base of the plant. When treated so, water may be rather liberally supplied during the growing season, but afterwards only sufficient to keep the leaves firm in texture should be given. The most suitable position for the plants is to suspend them

against a wall in a Warm house, but failing that, a pillar, or the end of the house is the next best.

Cattleya Bowringiana will need very little water as soon as it has gone out of bloom, also C. maxima, a species that is not so extensively grown as it deserves. Most plants of this genus, and a large number of others as well, must be more than glanced at before giving water, and a pretty safe rule to follow, when in doubt as to the desirability of giving water to a plant or not, is to defer the operation until the morrow; procrastination in this case being better than miscalculated judgment.

## MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

THERE was a fine display of Orchids at the meeting of this Society on October 7th, and the awards comprised three Silver Medals, three First-class Certificates, five Awards of Merit, and one Cultural Certificate.

G. Shorland Ball, Esq., Wilmslow (gr. Mr. Hay), staged a very fine collection, for which he was awarded a Silver Medal, and amongst which were noticeable Cypripedium × giganteum Harefield Hall variety (First-class Certificate), C. × Moensii (Award of Merit), C. tonsum giganteum (Award of Merit), and an exceedingly good dark-lipped Cattleya labiata.

Thomas Statter, Esq., Whitefield (gr. Mr. Johnson), showed an excellent collection of Dendrobium Phalænopsis, a mass of bloom, and received a Silver Medal.

William Bolton, Esq., Wilderspool (gr. Mr. Cain), showed a fine group, and was awarded a Silver Medal. Conspicuous amongst these was Cattleya × Hardyana Boltoniana, a beautiful variety, near Massaiana (First-class Certificate.) Some very fine forms of C. Harrisoniana were also included in this exhibit.

John Leemann, Esq., Heaton Mersey (gr. Mr. Edge), showed a very nice group, for which he received a Vote of Thanks. Some fine forms of Cypripedium were in this group, and a very fine dark variety of Cattleya labiata, also Cattleya × Hardyana, which the Committee expressed a wish to see again when next in flower.

O. O. Wrigley, Esq., Bury, showed some interesting Cypripediums.

Messrs. Hugh Low & Co., Upper Clapton, showed Cattleya Dowiana Mrs. Gratrix (First-class Certificate), Cypripedium insigne Nellie Don (Award of Merit), and Lælio-cattleya × Nysa splendens (Award of Merit.).

Messrs. James Backhouse & Son, York, showed a magnificent specimen of Vanda cœrulea with about a hundred flowers upon it, which received an Award of Merit and Cultural Certificate.

The meeting on October 21st was one of the most successful the Society has had. Fifty-four plants were brought before the Committee, including some very choice varieties, and ten First-class Certificates, seventeen Awards of Merit, and four Cultural Certificates were granted.

W. Thompson, Esq., Stone (gr., Mr. Stevens), showed a fine plant of Vanda Kimballiana, the flowers being of good quality, and a large specimen of Cypripedium Spicerianium magnificum, both of which received Cultural Certificates. He also sent Odontoglossum crispum bellissimum, Cypripedium Charlesworthii marginatum, and C. × Juno, each receiving an Award of Merit, and a group of cut flowers for which a Vote of Thanks was accorded.

T. Statter, Esq., Whitefield (gr. Mr. Johnson), showed a beautifully grown plant of the original Cattleya × Hardyana. This is a portion of the plant first flowered by the late Mr. George Hardy, and was purchased at the sale of his Orchids. The plant was in the pink of health and condition, and had a mass of roots extending from the basket some three feet long. It was deservedly awarded both a First-class Certificate and a Cultural Certificate. This exhibitor also obtained a First-class Certificate for Cattleya Dowiana Johnsoni, a very distinct form of this species, with the petals much streaked and irregularly marked with red. Mr. Statter also staged Cypripedium × Moensii, and C. insigne Statteriamum, each receiving an Award of Merit.

A. Warburton, Esq., Haslingden (gr. Mr. Lofthouse), showed the very fine Cattleya labiata Peetersiana (*supra*, ii. p. 78), of a deep cardinal red throughout, which was deservedly awarded a First-class Certificate.

John Leemann, Esq., Heaton Mersey (gr. Mr. Edge), showed a beautiful Cattleya × Hardyana of quite a different type to that shown by Mr. Statter, and received a First-class Certificate. He also showed Cypripedium × Harrisianum superbum (Award of Merit), Cattleya × Mantinii (Award of Merit), and Epidendrum Wallisii.

G. W. Schofield, Esq., Rawtenstall (gr. Mr. Schill), showed Cypripedium × Lawrebel and C. Lawrenceanum Hyeanum, both of which obtained First-class Certificates. Cattleya × Mantinii and Lælia purpurata Annie Louise, both received Awards of Merit.

S. Gratrix, Esq., Whalley Range (gr. Mr. McLeod), showed Cattleya labiata Samuel Gratrix, with pure white sepals and petals, and the labellum slightly coloured with dark red markings; also Cypripedium insigne Sanderæ with very fine bloom. First-class Certificates were awarded to both of them. Cypripedium insigne Ernestii received an Award of Merit.

E. J. Sidebotham, Esq., Bowdon (gr. Mr. Shiner), showed a very good form of Lælia Perrinii, and a very fine variety of Cattleya maxima (Award of Merit).

Messrs. Hugh Low & Co., Upper Clapton, showed Lælia prestans alba (First-class Certificate), Cypripedium × William Lloyd (Award of Merit), C. Spicerianum virescens (Award of Merit), C. Madame × George Truffaut and C. × Facinator. The group received a Vote of Thanks.

Messrs. F. Sander & Co., St. Albans, showed a very distinct Odontoglossum grande, in which the usual dark brown markings were almost entirely effaced. The effect was very pretty, and an Award of Merit was given.

H. H. Bolton, Esq., Newchurch (gr. Mr. Eastwood), showed Cattleya labiata Elsie. The petals and sepals are pure white, and the lip is slightly streaked with mauve veinings, much after the manner of the one called R. I. Measures's variety. It obtained a First-class Certificate. Cattleya labiata atrata received an Award of Merit.

W. C. Clarke, Esq., Sefton Park, Liverpool (gr. Mr. Jones), showed some nice things, conspicuous amongst which was a good variety of Cypripedium insigne, which received a Cultural Certificate, and C. × Bryani superbum (Award of Merit).

Messrs. Charlesworth & Co., Heaton, Bradford, staged a very fine group of Cattleya labiata, for which a Vote of Thanks was awarded. C. × Mantinii nobilior received an Award of Merit.

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Some resolutions respecting the awarding of First-class Certificates are recorded on another page. At a Special General Meeting held on the same date the rule relating to subscriptions was amended as follows :—

Rule 4.—"The annual subscription for gardeners shall be half-a-guinea, and in all other cases one guinea."

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THERE was a very fine display of Orchids at the Drill Hall, James Street, Westminster, on October 12th last, and as the afternoon lecture (reported on another page) by Mr. C. C. Hurst, was devoted to "Some Curiosities of Orchid Breeding," this meeting was of particular interest to Orchidists.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman) exhibited a very effective group, to which a Silver Flora Medal was given. It contained a number of good forms of Cattleya labiata, including the beautiful white form with delicate pink veining on the lip, known as R. I. Measures's variety, also Lælio-cattleya × Sallieri (L. purpurata ♀ × C. Loddigesii ♂), bearing a good spike of light-rose flowers. Cypripedium × calloso-Mastersianum, C. × Chapmanii, a splendid

specimen of Dendrobium aureum, some good Lælia pumila, and other Orchids.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent a fine plant of Cryptophoranthus Dayanus, bearing many of its remarkable flowers, to which a Botanical Certificate was given.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howes), sent a form of Cypripedium Charlesworthii, called Dulcote variety, in which the dorsal sepal is variegated with white and rose, and the remarkable Zygopetalum Jorisianum, with prettily fringed lip, the latter receiving an Award of Merit.

H. T. Pitt, Esq., Rosslyn, Stamford Hill, received an Award of Merit for a well-grown example of Odontoglossum grande Pittianum, a clear yellow form in which the brown markings of the typical form are absent.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent Maxillaria punctato-striata, and the singular Epidendrum (Nanodes) Mantinii, a Botanical Certificate being awarded to the latter.

His Grace the Duke of Westminster, Eaton Hall, Chester (gr. Mr. Barnes), sent a fine dark-coloured form of Dendrobium Phalænopsis.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whiffen), sent a fine well-flowered plant of Cattleya × Mantinii nobilior.

H. J. Harris, Esq., Bowden Hill House, Chippenham (gr. Mr. Penton), sent a fine form of Odontoglossum grande.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), exhibited the pretty Lælio-cattleya × Firefly, L.-c. × illustris (L. Dayana ♀ × C. Warscewiczii ♂), L.-c. × odorata (C. Eldorado ♀ × L. xanthina ♂), a yellowish white form with some rose-coloured markings on the lip, and the handsome Cattleya × Eclipse.

J. W. Temple, Esq., Leyswood, Groombridge (gr. Mr. Bristow), sent a pretty Lælio-cattleya of unrecorded parentage.

Messrs. James Veitch & Sons, Chelsea, staged a most brilliant and effective group, to which a Silver-gilt Flora Medal was deservedly given. It contained a good plant of the graceful Cœlogyne × Veitchii, bearing six pendulous racemes of pure white flowers, Sobralia × roseo-macrantha, a handsome hybrid with large purple-rose flowers, the sepals and petals margined with white, Lælio-cattleya × Lucilia (L.-c. × elegans ♀ × C. Dowiana ♂), a handsome hybrid with pale rose sepals and petals, and a very richly-coloured lip bearing some yellow on the disc, the handsome L.-c. × Pallas, L.-c. × Eudora, L.-c. × Novelty, L.-c. × Nysa and varieties, Epiphronitis × Veitchii, Cattleya × Chloris, C. × Eros, some handsome forms of C. labiata, the graceful Oncidium phymatochilum, O. tigrinum, O. Forbesii, O. prætextum, O. varicosum,

O. divaricatum, Odontoglossum bictoniense album, a handsome form of O. Uroskinneri, O. grande, the rare Comparettia coccinea, Ionopsis paniculata, Angræcum citratum and A. Chailluanum, Cypripedium purpuratum, C. insigne Sanderæ, C. × Arthurianum, C. × œnanthum superbum, C. × Arete, C. × Drurio-Lawrenceanum, the brilliant orange-scarlet Dendrobium subclausum, D. Phalænopsis, fine examples of D. stratiotes, &c. A fine specimen of D. taurinum var. amboinense, about six feet high, and having several racemes, was awarded a Botanical Certificate. It was described at page 304 of our last issue.

Messrs. Hugh Low & Co., Upper Clapton, received a Silver Flora Medal for a very effective group, containing some fine forms of Cattleya labiata, C. Dowiana, Oncidium Lanceanum, the beautiful Oncidium ornithorhynchum album, Dendrobium Phalænopsis, the handsome Cypripedium insigne Laura Kimball, C. × William Lloyd, C. × Mrs. Tautz, &c., and some fine examples of Odontoglossum grande, O. crispum, and Lælia pumila. A good form of the latter, called Low's variety, with light lilac-purple flowers, received an Award of Merit.

Messrs. B. S. Williams & Son, Upper Holloway, received a Silver Banksian Medal for a good group, including the handsome Pescatorea Lehmanni, Saccolabium Blumei, Cochlioda vulcanica, Dendrobium Phalænopsis and D. bigibbum, Odontoglossum cristatum, O. Wallisii purum, O. constrictum, some good Cattleya labiata, Cypripedium Chamberlainianum, C. × œnanthum, C. × giganteum, C. × Pitcherianum, &c.

Mr. J. H. Moore, Eldon Place Nursery, Bradford, exhibited Vanda × Moorei, a very interesting natural hybrid between V. cœrulea and V. Kimballiana, to which an Award of Merit was given.

Mr. T. Rochford, Turnford Hall Nurseries, also received an Award of Merit for Vanda cœrulea Rochfordiana, a pretty, nearly white form, tinted with pink on the lip.

Messrs. F. Sander & Co., St. Albans, exhibited Cattleya × Mars (labiata ♀ × Lawrenceana ♂), some fine forms of C. labiata, one of them white with a purple blotch on the lip, Cattleya Bowringiana, and other Orchids.

There was an exceptionally fine display of Orchids at the meeting on October 26th, and the attendance was greater than on any previous occasion this season, both doubtless due to the fact that the Victoria Medals of Honour were to be distributed, a ceremony which took the place of the usual afternoon lecture. The names of the distinguished recipients whose work has been specially connected with Orchids in some form or other were given at page 258.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), received an Award of Merit for Lælia pumila albens, a fine white variety

with some purple markings on the lip, also for Cattleya × Hardyana magnifica, an exceptionally fine and richly coloured form. He also exhibited three good C. Dowiana aurea, Lælio-cattleya × Tydæa, and a pretty dark-veined Cypripedium Charlesworthii.

C. K. Wild, Esq., Bramcote, Weybridge (gr. Mr. Pallant), exhibited an exceptionally fine and richly coloured form of Cattleya Bowringiana, called Wild's variety, to which an Award of Merit and a Cultural Commendation were given.

R. I. Measures, Esq., Camberwell (gr. Mr. Chapman), staged a fine group, to which a Silver Flora Medal was given. It contained a series of twenty-five forms of Cattleya labiata, C. Bowringiana lilacina, some good C. Dowiana, Dendrobium aureum, a fine specimen of Oncidium ornithorhynchum album with seventeen spikes, Cypripediums, &c., also a fine form of Lælia purpurata, called Mrs. R. I. Measures, to which an Award of Merit was given. This latter had blush-white sepals and petals, the latter closely lined with purple, and the lip rich purple in front and white behind, with some purple lines in the throat.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), sent a fine Cypripedium × Arthurianum, and two plants of C. Haynaldo-Chamberlainianum, the first seedling from C. Chamberlainium which has flowered, which novelty received an Award of Merit.

R. B. White, Esq., Addarroch, received an Award of Merit for Odontoglossum crispum "Sunlight," a very fine variety with white flowers slightly tinged with rose and blotched with reddish brown, the petals bearing some small spots in addition.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), showed a very fine plant of Lælia Perrinii alba, to which a Cultural Commendation was given.

W. C. Walker, Esq., Winchmore Hill (gr. Mr. Cragg), received a Silver Banksian Medal for a nice group, containing good Cattleya labiata, C. Bowringiana, Odontoglossum madrense, a good O. crispum with seventeen flowers on the spike, Oncidium Forbesii, O. prætextum, &c.

Mrs. Wingfield, Ampthill House, Bedfordshire (gr. Mr. Empson), also received a Silver Banksian Medal for a good group of well-grown Cattleya labiata, Oncidium varicosum, and other showy Orchids.

J. Bradshaw, Esq., Southgate, sent Cypripedium purpuratum and some very fine and distinct varieties of Cattleya labiata.

Frau Ida Brandt, Riesbach, Zurich (gr. Mr. Schlecht), sent Cattleya Bowringiana, Miltonia spectabilis rosea, and M. s. Moreliana.

Mrs. Briggs-Bury, Bank House, Accrington, sent a fine Cypripedium × Arthurianum, C. insigne Ballianum, a fine Cattleya Warscewiczii with crisped labellum, and Cattleya × Adonis, a cross between C. Mossiæ and

C. Warscewiczii, and most like the latter, but the disc of the lip cream-white and the front lobe marbled with rose.

E. Hockliffe, Esq., Uppingham, Rutland (gr. Mr. Cant), showed a distinct form of Cattleya × Hardyana, having the segments tinged with lilac and the lip veined with yellow on a reddish purple ground.

C. J. N. Ingram, Esq., Godalming (gr. Mr. Bond), showed Lælio-cattleya × Diarmid (L. Perrinii × L.-c. × elegans Turneri), L.-c. × Homére, L.-c. × Lady Rothschild, and a good form of Cattleya Bowringiana.

Captain W. A. Julian, Woodside, Plymouth, sent two beautiful varieties of Déndrobium Phalænopsis.

Captain Law Schofield, Rawtenstall (gr. Mr. Schill), sent a pretty form of Lælia purpurata with purple-veined petals.

Frank Lloyd, Esq., Coombe House, Croydon, showed Cattleya labiata with curiously abnormal flowers.

T. Statter, Esq., Whitefield (gr. Mr. Johnson), sent the handsome Cattleya Dowiana Johnsoni.

T. W. Swinburne, Esq., Winchcombe, sent Odontoglossum grande, showing two flowers fused together.

Reginald Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz), sent Cypripedium × Clio and a good Cattleya Dowiana aurea.

Messrs. James Veitch & Sons, Chelsea, staged a large and magnificent group, to which a Silver-gilt Flora Medal was given. It contained good examples of Cattleya × Wendlandiana, C. × Mantinii, C. Dowiana aurea, C. maxima, and a fine series of C. labiata, Lælio-cattleyas × Decia, × Pallas, × Lady Rothschild, × Statteriana, × Ino, × Tiresias, × Pisandra, and × Baroness Schröder, Dendrobium taurinum amboinense, D. Dearei, D. stratiotes, Cœlogyne Veitchii, Epidendrum Wallisii and E. × Wallisio-ciliare, Vanda Sanderiana, Cypripediums × Arthurianum, × œnanthum, × Leeanum varieties, and others, some of them being large, well-flowered specimens. Three striking novelties were Phaio-calanthe × insperata (P. grandifolius ♀ × C. Masuca ♂), intermediate in general character, but most resembling the pollen parent in the flowers, Cattleya × Olivia (Trianæ ♀ × intermedia ♂) and C. × Melpomene (C. Forbesii ♀ × Mendelii ♂), the two latter each receiving an Award of Merit.

Messrs. W. L. Lewis & Co., Southgate, exhibited some good Lælia pumila, one fine form called L. p. magnifica receiving an Award of Merit. L. longipes (Lucasiana) also received a Botanical Certificate.

Messrs. Hugh Low & Co., Upper Clapton, exhibited a good group, containing some fine Vanda cœrulea, Cypripedium × Arthurianum, C. × Fascinator, C × Leeanum virescens, and other showy Orchids.

Messrs. F. Sander & Co., St. Albans, also contributed a fine group, containing Habenaria carnea, Oncidium tigrinum with variegated foliage, O. ornithorhynchum, Lælia pumila and monophylla, Sophronitis grandiflora, Vanda cœrulea, Cypripediums, Cattleyas, and other showy Orchids of the season.

Messrs. B. S. Williams & Son, Upper Holloway, also staged a good group, containing the striking Pescatorea Klabochorum, Dendrobium bigibbum, Oncidium crispum and O. Phalænopsis, Vanda tricolor, Lælia Perrinii, and some showy Cattleyas and Cypripediums.

Miss Emett, 6, St. Charles' Square, N. Kensington, sent a case of remarkably life-like models of flowers, including Habenaria Susannæ and Disa grandiflora. A Silver Banksian Medal was awarded.

## ORCHID PORTRAITS.

Bulbophyllum barbigerum.—*Gartenfl.*, Sept. 15, pp. 490, 491, fig. 64.

Cattleya Schofieldiana gigantea.—*Gard. Chron.*, Oct. 9, p. 246, fig. 75.

Cirrhopetalum robustum, Rolfe.—*Bot. Mag.*, t. 7557.

Cypripedium Chamberlainianum.—*Bull. Soc. Tosc, Ort.*, Sept., p. 194, fig. 25.

Cypripedium × hirsuto-Sallieri.—*Journ. of Hort.*, Oct. 21, p. 389, fig. 58.

Cypripedium insigne citrinum.—*Rev. Hort.*, Oct. 1, p. 448, with plate.

Epiphronitis × Veitchii.—*Gartenfl.*, Oct. 15, pp. 553, 555, fig. 74.

Grammatophyllum speciosum.—*Gard. Mag.*, Oct. 2, p. 613, with fig.

Lælia pumila, Gatton Park variety.—*Gard. Chron.*, Oct. 16, p. 262, fig. 79.

Lælio-cattleya × Pallas.—*Gartenfl.*, Oct. 15, pp. 553, 557, fig. 75.

Lycaste Denningiana, Rchb. f.—*Gard. Chron.*, Oct. 2, p. 231, fig. 70.

Saccolabium bellinum.—*Journ. of Hort.*, Sept. 30, p. 309, fig. 46.

Vanda amœna.—*Gard. Chron.*, Oct. 2., pp. 226, 229, fig. 69.

Vanda Hookeriana.—*Gard. Mag.*, Oct. 16, p. 645, with fig.

## CORRESPONDENCE, &c.

C. Stoldt.—Odontoglossum platyodon, Rchb. f.

W. B., Weston-super-mare.—A very light form of Zygopetalum Mackayi.

De B. C.—Odontoglossum auriculatum.

D. B. R., Liscard.—Pelexia roseo-alba, a Brazilian species.

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## Orchid Society.

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THE MEETINGS of the COMMITTEE, for the purpose of Adjudicating upon the Orchids submitted, will take place on THURSDAY, May 20 inst., and EVERY ALTERNATE THURSDAY therefrom until September 23, 1897, at 12 o'clock prompt. Open to members from 1 o'clock to 4 o'clock p.m.

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Having had a great and varied experience with Orchids and their culture, he proposes paying a visit—or more, according to arrangement—to the establishment of any lady or gentleman in any part of the United Kingdom who may be pleased to accept his services, and to personally demonstrate there on the spot *all* matters appertaining to the well-being of Orchids.

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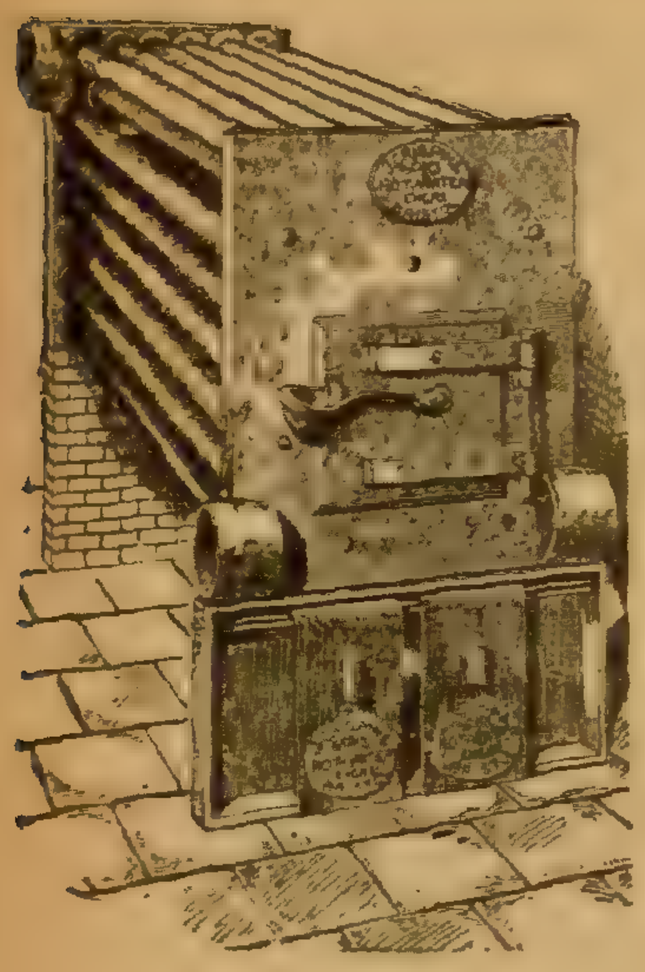

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# THE ORCHID REVIEW:

## An Illustrated Monthly Journal,

## *DEVOTED TO ORCHIDOLOGY.*

Contents.


| | PAGE |
|---|---|
| Calendar of Operations for December | 368 |
| Cattleya × Hardyana ... ... ... | 363 |
| Cattleya × Imperator ... ... ... | 365 |
| Cattleya × Massiliensis ... ... | 357 |
| Correspondence, &c. ... ... ... | 376 |
| Curious Crosses ... ... ... | 365 |
| Cymbidium Dayanum.. ... ... | 356 |
| Cypripedium Boissierianum from seed | 362 |
| Cypripedium × Tautzianum ... ... | 364 |
| Deterioration of Orchids ... ... | 358 |
| Dies Orchidianæ ... ... ... | 354 |
| Hybridist ... ... ... ... | 359 |
| Cattleya × Astrea ... ... ... | 359 |
| Cattleya × Bowringiano-blesensis ... | 360 |
| Cattleya × Breauteana ... ... | 360 |
| Cattleya × dubbiosa ... ... | 360 |
| Cattleya × Fernand Denis... ... | 359 |
| Cattleya × Feuillati ... ... | 360 |
| Cattleya × Gaudii ... ... ... | 360 |
| Cypripedium × Norrisianum ... | 360 |
| Lælio-cattleya × Stelzneriano-Hardyana ... ... ... ... | 360 |
| Lælio-cattleya × Gotteiana marmorata | 362 |
| Manchester and North of England Orchid Society ... ... ... | 372 |
| Manuring of Orchids ... .. ... | 358 |
| Notes ... ... ... ... ... | 353 |
| Orchid Portraits ... ... ... | 376 |
| Orchids at the Royal Horticultural Society. ... ... ... ... | 374 |
| Paphiopedium Chamberlainianum (Fig. 16) ... ... ... ... | 361 |


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# THE ORCHID REVIEW.

VOL. V.] *DECEMBER*, 1897. [No. 60.

## NOTES.

THE next meeting of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, on December 14th, when the Orchid Committee will meet at the usual hour, 12 o'clock, noon.

The Manchester and North of England Orchid Society will hold its last meeting for the year at the Coal Exchange, Manchester, on December 16th, when the Committee will also meet at mid-day.

Flowers of Vanda Sanderiana Holmewood variety, from the collection of J. T. Bennett-Poë, Esq., of Cheshunt—a plant which was exhibited at the Drill Hall, Westminster, on November 9th—show that this variety has the petals broader and more rounded than usual, hence more overlapping the sepals, these latter also being shorter than usual, giving the flower a nearly circular outline. It is also very well coloured.

A very pretty form of Cattleya labiata is sent from the collection of H. H. Scott, Esq., of Tynemouth, by Mr. F. Roslin, in which the sepals, petals, and side lobes of the lip are irregularly veined and marbled with rosy purple on a lighter ground. It is not flamed as in C. l. Hardyana, and may be called C. l. marmorata. A good Cypripedium insigne with numerous large blotches on the dorsal sepal is also sent.

A very beautiful Cattleya labiata alba is sent from the collection of F. Hardy, Esq., of Ashton-on-Mersey, by Mr. Stafford. It is pure white with orange veinings on the disc, and in this respect recalls C. Mossiæ Wageneri. A flower is also enclosed of C. Bowringiana gigantea, in which the petals are over 1½ inches broad, and the remaining parts of corresponding development.

Lælia pumila varies considerably in size and colour. A large form with very brightly coloured sepals and petals, and the front lobe of the lip very dark crimson-purple, is sent from the collection of James Davidson, Esq., Summerville, Dumfries. It has been out for a month, and is said to have been darker when at its best.

The *Dictionnaire Iconographique des Orchidées* of Messrs. Cogniaux and Goosens, continues to make steady progress. The September number completes the first year of its existence, and with it is issued a list of the plates, showing that over 150 species and varieties have now been figured. In this part Cypripedium Elliottianum is figured as a distinct species, but it is now well known to be only a synonym of C. Rothschildianum, and a note under Cattleya Warneri shows that the history of that species, given at page 328 of our first volume, has been overlooked.

## DIES ORCHIDIANÆ.

THE establishment by the Royal Horticultural Society of the Victoria Medal of Honour for distinguished services to Horticulture, in commemoration of Her Majesty's long reign, has met with wide approval, and the presentation of the coveted honour to the sixty selected recipients marks a red letter day in the annals of the Society. The delicate task of selection was carried out with the intention that "every department connected with the art and science of gardening should be represented," and accordingly we find the names of nine gentlemen in the list whose work has been prominently connected with Orchids:—W. Boxall, W. Bull, Sir J. D. Hooker, F. W. Moore, J. O'Brien, Hon. W. Rothschild, F. Sander, Baron Sir H. Schröder, and J. Seden. Proceeding to analyse them, we find, one botanist, one collector, one hybridist, two nurserymen, two professionals, and two amateurs, and the names are as representative as could be expected under the circumstances.

---

The institution of this medal seems to have recalled another which has been lost sight of during recent years, namely the Lindley Medal. This, the *Gardeners' Chronicle* remarks, was instituted in commemoration of the invaluable services rendered to horticulture in general and the Royal Horticultural Society in particular, by the late Dr. Lindley, and was to be given preferentially for excellence in cultivation. It would appear that the medal has not been awarded for many years, and the question is asked, Can it be possible that no cultivators of rank have since come to the front? or has the Society forgotten its functions?—*G. C.*, Nov. 6th, 1897, p. 329.

A week later Mr. Philip Parkes stated that on March 5th, 1867, he was awarded the Lindley Medal for an exhibit of three Phalænopsis Schilleriana at South Kensington, but though thirty years have passed it has not yet come into his possession. In April, 1867, Mr. G. Eyles wrote "that the medal was awarded to me, and was in course of preparation, and that I might expect it in a fortnight or so." In 1874, Col. Davenport wrote that "when the distribution of Lindley Medals took place I should not be overlooked," a promise repeated in August 1875. "I have long given up any hope," the writer adds, "that may have lingered through many years, that the promises of the secretaries will be redeemed. Still, I may be pardoned in desiring to know whether others actually received the medals? Not for its intrinsic value did I covet this prize, but in winning a medal specially given in memory of one of our greatest horticulturists, and bestowed on such rare occasions, there was to me an honourable distinction, which the Society, by withholding the medal, has never recognised."—*l. c.*, Nov. 13th, p. 349.

---

Mr. James Anderson states that although he did not get the Lindley Medal, it was certainly intended to give him one for two grand examples of Odontoglossum grande which were sent up from Meadow Bank quite thirty years ago "both with branched panicles of extraordinary sized flowers, half as big again as the best we see now. The one panicle had sixteen flowers and the other fifteen flowers, and the substance, the ground-colour, and the blotching were such as had never been seen before nor since up to this day. The Council sitting at the time were unanimous in expressing that such a marked example of cultural development was worthy of the coveted Lindley Medal. Mr. Barron has several times since told me that no such example of Orchid culture had ever been submitted in London, and it must have been an oversight on the part of the Council to pass it by." Mr. Anderson concludes by saying that the Lindley Medal ought not to be lost among horticultural honours.—*l. c.*, Nov. 20th, p. 369. It certainly deserves a better fate.

---

The following note respecting Cattleya labiata is taken from the Report of the Scientific Committee of the R. H. S. for November 9th last (*G. C.*, Nov. 20th, p. 370) :—"The species was introduced some fifty years ago, and subsequently lost; but it had been lately re-discovered in and introduced from Pernambuco." And this is the plant which flowered for the first time in Europe in 1818, and has been continuously cultivated ever since; of which Messrs. Veitch, just prior to its re-discovery, wrote :—"Notwithstanding its long sojourn in this country, propagation by division, the only available method, has been no more than sufficient to secure a limited

number of plants (*Man. Orch.*, ii. p. 15)—the choice plant of which before its re-introduction it had become customary to designate as labiata *vera*, and whose identity with the rediscovered plant raised such a fierce controversy a few years ago. Such is fame!

---

Another stage seems to have been reached (page 338) in the history of that mythical Cattleya Aclandiæ alba, and it has been decided that the purchaser is entitled to the return of the money paid, with any additional sum reasonably spent on the development of the plant, but not to damages for breach of warranty; unless he re-sold the plant with the same warranty, and had to settle a claim against him, when the amount of that claim might also be included in the damages. It appears that notice of appeal has been given, so perhaps the last has not been heard of the matter.

---

The plea of reversion does not appear to have been set up in this case as in the one reported at page 336 of the last volume, and now I should like to know where the myth about the plant being an albino originated. The defendant declined to say what he gave for the plant, but if he himself was victimised perhaps he will now take action, adding the amount of this claim which he has had to settle to the damages. The process might be repeated as often as necessary until the myth was traced to its source. And then we should see what we should see.

ARGUS.

---

## CYMBIDIUM DAYANUM.

THE re-discovery of a lost species is always interesting, especially when its identity has been obscured by subsequent misidentification, as in the present instance. A Cymbidium sent to Kew for determination by Mr. F. W. Moore, of Glasnevin, proved identical with a coloured sketch of a flower, labelled "Cymbidium sp. from Assam; habit and foliage like C. Mastersii. S. Jennings, Esq., Calcutta, 12/67." A further search revealed its identity with C. Dayanum, Rchb. f., which by some inscrutable blunder has been confounded with the utterly different C. eburneum var. Dayi. And now, unfortunately, it has been re-described under the name of C. Simonsianum, King and Pantling. The following is the history of the species:—

C. Dayanum was described in 1869 by Reichenbach (*Gard. Chron.*, 1869, p. 710), who remarked—"An elegant species, bearing very long narrow leaves, and an inflorescence of yellow-white flowers, marked with port wine coloured streaks on the middle lines of the sepals and petals, and such a border and numerous small streaks on the lip. It was imported from Assam by J. Day, Esq., to whom it is inscribed as a new token of a long

and most pleasant acquaintance. We have compared the types of all the described species, from all of which the present plant differs."

The confusion with C. eburneum var. Dayi (Jenn. Orch., t. 16) probably arose from the similarity of name, but it began with Messrs. Veitch (Man. Orch., IX., p. 14), and is repeated in the Flora of British India (VI., p. 12, where, however, the name is changed to var. Dayana, and the reference to Jennings' figure is omitted), and the Index Kewensis (I., p. 682).

C. Simonsianum was described by Messrs. King & Pantling in 1895 (*Journ. Asiat. Soc. Beng.*, lxiv., p. 338). The locality is given as "Sikkim: in the valley of the Teesta; elevation about 1,000 feet. Assam: locality unknown; flowers in August." Its history is thus given:—"The flowers of this species are sweet-scented; the sepals and petals are white, with a crimson central line; the lip is also white, but has oblique crimson lines on the lateral lobes, with large blotches of the same colour on the apical lobe; the column is a very dark crimson, and the anther of a pale yellow colour. Specimens of this plant were sent many years ago from Assam by the late Dr. J. C. Simons, to whom the Calcutta Herbarium is indebted for numerous contributions of plants, and for a large number of drawings of Orchids. The species is now dedicated to his memory."

The leaf and inflorescence sent by Mr. Moore agree in every respect with the preceding particulars, and it only remains to say that the species is allied to C. pendulum, Swartz, but is readily distinguished by its narrow, acute, much thinner leaves, the one sent being just half-an-inch broad. It is a very interesting matter to be able to thus clear up its history.

R. A. Rolfe.

## CATTLEYA × MASSILIENSIS.

We have received from the Right Hon. Joseph Chamberlain, M.P., Highbury, Birmingham, an inflorescence of the above beautiful hybrid, with the request for an opinion as to its parentage. Mr. Chamberlain writes that it was purchased in May, 1896, from M. de Lairesse, guaranteed to be one of two seedlings raised by M. Louis Fournier, of Marseilles, it is supposed from Cattleya Trianæ crossed with C. Dowiana aurea, the parentage, however, being open to question. The other plant, presumably, is figured in the *Revue Horticole* in January last (1897, p. 12, with plate), where it is stated to have been raised by M. Ch. Maron in M. Fournier's establishment, from some Cattleya (supposed to have been C. Trianæ), crossed with C. Dowiana aurea, and that the plant was six years old. It is dedicated to the city of Marseilles. The flowers now sent, which were exhibited at the Drill Hall, Westminster, on November 9th, quite agree with this figure, and thus confirm their identity. Now comes the

question of parentage. The first thing that strikes us is the strongly-marked characters of Lælia crispa in the lip, and a comparison with the hybrids known to have been derived from that species leaves no room for doubt that the present one is also descended from it. Next we fail to find a single character traceable to C. Dowiana aurea, and had that been the second parent it would have been a form of Lælio-Cattleya × Pallas, which is quite different. It was clearly a Cattleya of the labiata group, and may quite possibly have been C. Trianæ flowering out of season, for the sepals and petals are light rosy lilac, the disc of the lip yellow, with numerous red-purple lines behind, and the rich amethyst purple of the front lobe and apex of the side lobes is very sharply defined. The hybrid is autumn-flowering, it is true, but this might be expected, being about intermediate between the normal flowering periods of the two species. The hybrids from C. labiata and C. Gaskelliana are known—L.-c. × Veitchiana and × Bryan, respectively—and the present one seems distinct from both. The pollinia are of the usual Lælio-cattleya type, four large and four small—but the latter are less developed than is sometimes the case—and it is evident that the hybrid must be called L.-c. × massiliensis. Mr. Chamberlain remarks that "whatever it may be, it is certainly an extraordinary plant; very robust with enormous bulbs, and growing and flowering most freely." Perhaps someone will confirm its descent from L. crispa and C. Trianæ.

## DETERIORATION AND MANURING OF ORCHIDS.

ORCHID deterioration, and I fear great losses from death, is now causing many growers to ask what is the cause, and a few to express their opinion with a certain amount of reluctance or diffidence, which, let us hope, will ultimately lead to a fuller discussion of causes and remedies. The very dangerous subject of manuring Orchids is also engaging the attention of some very eminent growers and chemists. As a grower who has determined to succeed and one who had losses at one time, I herewith give a few remarks on my experience.

First, I think collectors might give fuller details of temperature and climatic conditions of Orchid habitats; if it is cold at night and if there is a dry and wet season, and any peculiarity that strikes them as different from our greenhouse practice.

I believe many growers fail and lose their Orchids from following the Calendars of Instructions given in the gardening press, which I think for many Orchids is too cool. I used to follow such instructions, and found Cattleyas, Lælias, and all Americans, so to speak, just existed. Noticing

when I called at such places as Messrs. Veitch's, Sander's, and a few private places such as Burford in Mr. Spyer's time, that their houses were always so hot that I soon wished myself outside, I took the wrinkle to keep my houses warmer than the Calendars said, and now I grow these Orchids without losses or deterioration, and get great quantities of flowers. As a present instance, I have just counted 290 flower spikes of Lælia anceps on 65 square feet of staging, and the white varieties are just as good as the coloured sorts.

Another great cause of failure is want of water in the growing season. When I say want of water I don't mean simply paucity in damping down, but in watering the plants. Don't be afraid of soft water, give it liberally and often.

When visiting Orchid growing establishments I always *from outside* look to see what air is given, if I find lots of top air given (and I often do find it so) I look for, and find, the plants looking bad, leaves yellow and growths poor, simply because top air causes a dry atmosphere, and we should know that Orchids absorb their life from a moist atmosphere and not from the great masses of peat and sphagnum so many wrongfully use. Again see how wonderfully well all those fine seedling Orchids grow and don't go back, simply because they get the best position in houses, namely, hanging from the roofs, which is clear evidence that we shade too much as a rule.

My experience with manure is, of course, limited, as I hope it will be, but I feel convinced that soot and lime sprinkled underneath the stages does wonders, as the leaves get such a dark colour, and it seems to me that the plants like it, as I fancy it is the roots that absorb the ammonia given off by the mixture. I have proved again and again that one handful of guano in a 150-gallon tank improves Dendrobes, Cattleyas, Lælias, Cœlogynes, and—who would think it?—Odontoglossums even.

JAS. HAMILTON.

Byrkley Gardens,
Burton-on-Trent.

## THE HYBRIDIST.

### CATTLEYA × ASTREA.

A HYBRID raised by M. Ch. Maron, in the establishment of M. Fournier, of Marseilles, from C. Skinneri × Loddigesii, and flowered in January last. Habit of C. Skinneri; sepals and petals clear rose; lip white, with a yellow throat aud a purple blotch in front.—Maron in *Le Jardin*, Oct. 20, p. 309.

### CATTLEYA × FERNAND DENIS.

Raised in the same collection, from C. Aclandiæ × Warscewiczii,

and flowered in April last. Habit of C. Aclandiæ; flowers 6¾ inches across; sepals and petals rose-purple with some deep violet spots, especially on the margin of the petals; lip very open, the front lobe coloured much as in C. Warscewiczii.—Maron, *l. c.*, p. 309.

### Cattleya × Feuillati.

Raised in the same collection as the preceding, from C. Leopoldi × superba, and flowered in April last. Flowers dark rose-purple, with some blackish spots; lip much like C. superba, but darker.—Maron, *l. c.*, p. 309.

### Cattleya × Breauteana.

Raised in the same collection as the preceding, from C. Loddigesii × superba, and flowered in April last. Flowers large; sepals and petals uniformly rose; lip violet-purple, lined in the throat, intermediate in shape. Pseudobulbs 2- or often 3-leaved.—Maron, *l. c.*, p. 310.

### Cattleya × Gaudii.

Raised in the same collection as the preceding, from C. Leopoldi × Loddigesii, and flowered in May last. Flowers clear rose, with numerous darker spots; front lobe of the lip brilliant magenta-rose.—Maron, *l. c.*, p. 310.

### Cattleya × dubbiosa.

Raised in the same collection as the preceding, and flowered in August last. The parents are doubtful, but supposed to be C. Trianæ and C. Harrisoniana. Flowers clear mauve with a violet blotch on the lip, which is said to resemble Lælia × Lindleyana in shape.—Maron, *l. c.*, p. 310. C. × dubia, Cogn. in *Chronique Orch.*, p. 74.

### Cattleya × Bowringiano-blesensis.

Raised in the same collection as the preceding, C. Bowringiana being the seed parent, and flowered in August last. Much resembles the seed parent in miniature; Flowers beautiful rose with a brighter-coloured lip.—Maron, *l. c.*, p. 310.

### Lælio-cattleya × Stelzneriano-Hardyana.

Raised in the same collection as the preceding, and flowered in August last. Pseudobulbs one- or two-leaved; flowers 6-6½ inches across; sepals clear rose, darker on the margins; petals cream with rose-coloured margins; lip magenta-purple, with two cream yellow blotches in the throat, separated by a purple line which extends down the disc.—Maron, *l. c.*, p. 310. The seed parent is a form of Lælio-cattleya × Schilleriana.

### Cypripedium × Norrisianum.

Raised in the collection of F. O. Rehder, Esq., Gipsy Hill, S.E., from Cypripedium purpuratum ♀ and C. × Leeanum ♂. Named after Mr. Norris, the gardener.—Fraser, in *Gard. World*, Nov. 6th, p. 148.

## PAPHIOPEDIUM CHAMBERLAINIANUM.

THE accompanying illustration represents an interesting specimen of Paphiopedium or Cypripedium Chamberlainianum, from the collection of J. T. Bennett Poë, Esq., Holmewood, Waltham Cross. The photograph was taken in April, 1895, and shows three scapes, one of them bearing three flowers. The centre scape (tied to a stick, which must not be mistaken for an additional scape) has gradually gone on elongating and flowering down to the present time (November, 1897), and has produced 27 flowers, while four additional buds can be detected, showing that the number is not yet exhausted. It has probably now reached something like its normal development, for among the wild inflorescences originally obtained

Fig. 16. PAPHIOPEDIUM CHAMBERLAINIANUM.

by Messrs. F. Sander & Co. was one showing 32 bracts. This gave rise to the idea that it produced long racemes of flowers, but it is now known that both this species and the allied P.Victoria-Mariæ extend their flowering over a long period, the scapes gradually elongating and developing additional flowers. Four, however, have been expanded on one scape at the same time, in the collection of W. Vanner, Esq., of Chislehurst, as was recorded at page 161 of our third volume. And in the previous year we recorded (p. 263) a plant in the collection of C. Winn, Esq., of Birmingham, which continued to flower all the time a capsule was maturing on the same scape,

the seedlings being up before the last flower was cut. In the peculiarity just mentioned, and in the shape of the bracts, these two species differ from every other in the genus, and it will be interesting to watch how far the character is communicated to the hybrids which have been raised from them. Both are now known to be natives of Sumatra.

## LÆLIO-CATTLEYA × GOTTOIANA VAR. MARMORATA.

A very distinct and handsome plant has appeared in the collection of Sir Frederick Wigan, Clare Lawn, East Sheen. It came home from Brazil—evidently from Bahia--in a collection of Cattleya Warneri, but on flowering proves to be a form of Lælio-cattleya × Gottoiana, a natural hybrid betwen this Cattleya and Lælia tenebrosa, whose history was given in these pages four years ago (*supra* i., p. 338). It agrees with the type in all essential characters, but differs in having the sepals and petals irregularly marbled and streaked with deep rose on a light rose-pink ground. The lip is rose with much darker nerves on the front lobe, the side lobes being paler with a few rosy streaks. The inflorescence is at present 2-flowered and the petals $3\frac{3}{4}$ inches long. In structure it is fairly intermediate between the two parents but in colour is most like the Cattleya, as seems to be usually the case with this rare and handsome hybrid.

R. A. R.

## CYPRIPEDIUM BOISSIERIANUM FROM SEED.

Now that hybrid Orchids are so easily raised it has been suggested that certain rare species might be increased by seed, and a very interesting note from Mr. Seden shows that this has been successfully accomplished by Messrs. James Veitch & Sons, the pioneers of Orchid hybridisation. The note runs:—"I herewith send you a flower of Cypripedium Boissierianum raised by us, the plant being fertilised with its own pollen. This is the second time we have raised it, and we keep up our stock this way. We have had no variety among the seedlings, all coming alike." This is very interesting, for we do not remember another instance of the stock of a rare species being raised in this way for commercial purposes. The case of C. Lawrenceanum Hyeanum raised in the collection of Norman C. Cookson, Esq., perhaps affords the nearest parallel instance. Of course seedling Orchids other than hybrids have been raised in cultivation on several occasions, but not with precisely the same object. Who will be the first to apply the process to the rare and beautiful C. Fairrieanum?

## CATTLEYA × HARDYANA.

(SEE FRONTISPIECE.)

THE frontispiece to the present volume represents the remarkable example of the original Cattleya × Hardyana, from the collection of T. Statter, Esq., Stand Hall, Whitefield, Manchester, which received both a First-class Certificate and a Cultural Certificate from the Manchester and North of England Orchid Society on October 21st last. The photograph, kindly sent by Mr. Statter, is accompanied by the following note :—

"This plant is part of the original Cattleya × Hardyana, which flowered with the late George Hardy, Esq., and received a First-class Certificate from the Royal Horticultural Society on August 11th, 1885. This plant looked like being dead for some one or two years, but was hung on a wire from the top of the house instead of being burned, because it was the original plant. One spring it commenced to grow, and went ahead, and Mr. Hardy sold several pieces at one hundred guineas each—two of them to his friend, Mr. Lee, of Audenshaw, near Manchester. One of these I purchased at Mr. Lee's sale, and it is now flowering with me. The sheath is eight inches long, and large in proportion, and bears three flowers. The roots are legion, and hang quite a yard from the basket. There are people who contend that Cattleyas of the aurea section cannot be kept vigorous for long, but this is a most interesting example to the contrary. The root action is beyond belief, and I attribute it very much to the shape of the basket it is grown in. Few people can grow Cattleya Dowiana aurea, because they will use the water at the wrong time. One gentleman told me it would make his hair grow grey to see how hard our aureas were dried. I shall never believe in draught for Orchids of this kind. Our Dendrobium Phalænopsis are grown with very little air, and I never saw finer."

This specimen is certainly an object lesson in the culture of this group, and recalls the Cattleya × Lord Rothschild from the same collection, which was figured at page 337 of our last volume. That also showed marvellous root development, which speaks volumes for the treatment given by Mr. Johnson. Particulars of this were given on the page just mentioned. and further details of the structure of the house, which possesses some peculiarities, may be found at page 291 of our second volume. Vigorous root action is a sure sign that a plant is under happy conditions, and in the case of Orchids whose roots are outside the compost, one can see precisely what is going on. Such plants must derive their food largely from the atmosphere, hence the importance of keeping this in a suitable condition.

The photograph is, of course, greatly reduced, but even now we have had to omit part of the roots from our figure. To have included all it would have been necessary to make the block 1¾ inches longer, or else to

have reduced the photograph considerably, and the latter was unadvisable.

We may add that the history of this beautiful natural hybrid, together with a figure and a complete list of its varieties, were given at pages 241-244 of our last volume, and shortly afterwards (p. 298) we had to record the flowering of artificially-raised examples in the collection of N. C. Cookson, Esq. Now we learn that it has also been raised and flowered by Mr. Bond, in the collection of C. N. L. Ingram, Esq., of Godalming, so that there can no longer be any doubt about its origin. Mr. Statter must be congratulated on having produced such a remarkable example.

## CYPRIPEDIUM × TAUTZIANUM.

THE curious case of Cypripedium barbatum crossed with the pollen of C. niveum in the collection of Reginald Young, Esq., Sefton Park, Liverpool, in which no trace of the pollen parent could be found in the offspring, has twice been mentioned in these pages (*supra*, iii., p. 201, and iv., p. 309). Mr. Young is persevering with this cross in the hope of clearing the matter up, and now reports some further progress. "Since attempting the first cross," he writes, "I have had many failures to obtain more seedlings, but I have also some success to report. On October 7th, 1896, I found several seedlings, now eighteen in number, raised from C. barbatum grandiflorum ♀ and C. niveum ♂, and in this instance both pollen masses were used. On November 1st, 1897, I found a single seedling from seed sown in the December previous, and it is not yet too late for more to show themselves. In November, 1896, I also found a single seedling of a cross in which the pollen parent was C. niveum giganteum, but unfortunately it has since died. It is perhaps a long time to look forward to, but I do hope to see some of these flower showing unmistakably the influence of both parents. I have still one seedling of the original cross which, by the texture and markings of its foliage, convinces me that I shall yet be able to prove that the crossing was properly effected, notwithstanding the absence of the niveum influence in the seedlings already flowered. From the reverse cross I have not yet succeeded in raising any seedlings." It would appear that although this rare and beautiful hybrid has been obtained, originally with C. niveum as the seed parent, and afterwards from the reverse cross (according to the records), it is not by any means an easy one to raise. It would be interesting to learn the experience of others with it. With respect to the variety lepidum, sent out by Mr. Bull, we learn that it was raised by Mr. Ayling, the raiser of the beautiful C. × Aylingii.

## CATTLEYA × IMPERATOR.

A VERY handsome Cattleya was exhibited at the Royal Horticultural Society's meeting on October 27th, 1896, by Messrs. Linden, of Brussels, under the name of Cattleya × Le Czar, and received a First-class Certificate. It was supposed to be a natural hybrid between C. labiata and C. granulosa, and was subsequently described and figured (*Gard. Chron.*, 1896, xx., pp. 592, 593, fig. 104; *Gard. Mag.*, 1896, ii., p. 775, with fig.; *Lindenia*, xi., t. 554). On November 4th last it was exhibited at a meeting of the Manchester and North of England Orchid Society by A. Warburton, Esq., Vine House, Haslingden, and received a similar award. Unfortunately, I have not seen the plant, but the drawings show clearly a combination of characters derived from the two species in question, and Mr. Warburton writes that the pseudobulbs show the same intermediate feature. There are five, ranging from 7 to 11 inches long, one bearing two leaves and two others only one—the older ones having presumably lost their leaves. The infloresence bore two flowers, which were rather a long time in bud before opening, and looked like a large granulosa. The flower has much of the general shape of this species, with its curved petals and very deeply three-lobed lip, and the texture is somewhat similar, but the colour is greatly modified. The sepals and petals are beautiful soft rose-pink, with a slight tinge of green in the former, the front lobe of the lip rich crimson-purple with a pale margin, and the side lobes blush white with purple reflexed tips, while the intervening isthmus is reddish with some orange markings. It bears a general resemblance to C. × Victoria-Regina, but the flower is larger and the lip more deeply divided, as would naturally be expected in a hybrid in which C. Leopoldi was replaced by C. granulosa. Hybridists who will make the cross suggested will probably succeed in confirming its parentage, and at the same time increase the stock of a rare and most beautiful plant. It has hitherto only been named in the vernacular, and the name now proposed conserves the original idea as nearly as possible, consistent with the requirements of botanical nomenclature.

R. A. ROLFE.

## CURIOUS CROSSES.

IN June last (*supra*, pp. 179—180) I recorded a few curious generic crosses, which, judging from the healthy appearance of the pods at that time, seemed likely to succeed. Since then four of those pods have finished their course, two of them having come to an untimely end, while the other two have ripened and produced good seeds, as the following notes will show.

On 18th March, 1897, Cypripedium Calceolus was crossed with the

pollen of Phragmipedium × Sedenii, and the pod, after passing through the usual stages of growth, ripened and opened naturally on 15th August (150 days after pollination). A careful examination of the interior of the pod showed thousands of shrivelled ovules, among which, here and there, were 166 plump and well-developed seeds. These latter were a shiny dark brown colour, and under the microscope a small dark egg-shaped spot (embryo) was discerned in the middle of each seed, and grains of green coloured matter (chlorophyll) were distributed all over the interior of the seed. They were almost transparent, and were covered with a finely-netted skin. They varied considerably in shape, some being bent up at the ends, others quite straight, some keel-shaped, others serpentine in outline, but all agreeing in having swollen middles and attenuated ends. Everyone of the 166 seeds appeared to be healthy and fertile.

On 16th April, 1897, Paphiopedium Exul was crossed with the pollen of Cypripedium Calceolus; the seed-pod duly matured and ripened on 18th November (216 days after pollination). An examination of the contents of the pod showed, like the last, a vast number of shrivelled ovules, but in this case there was a much larger proportion of plump, well-developed seeds, these numbering 597 all told. Viewed under the microscope these seeds appeared to be more or less egg-shaped, and being almost opaque were more difficult to examine than the last, being dull dark brown in colour, and covered with a coarsely netted skin, the surface of which was very uneven in colour. The whole of these seeds were plump, and as far as one could judge, perfectly healthy and good.

On 9th May, 1897, Cattleya Mossiæe was crossed with the pollen of Angraecum sesquipedale. The pod gradually swelled until 18th June (40 days after pollination), when it measured $2\frac{1}{8}$ inches in girth. On this day it commenced to change colour, turning from deep green to pinky green, and then to pinky yellow, and on the 1st of July the pod was quite soft at the base, the upper part nearest the column being still more or less firm, but evidently in a state of decay. A vertical section of the pod and column showed that the pollen tubes had grown down the columnar canal to the length of $2\frac{1}{2}$ inches, and in a few cases had even entered the seed-chamber itself, though they did not appear to have come into contact with the ovules. These latter had developed slightly, but showed no signs of fertilisation.

On the same day Angraecum sesquipedale was crossed with the pollen of Lælia purpurata. The pod swelled very rapidly until 28th July, when it reached its climax (80 days after pollination). It then measured $4\frac{1}{2}$ inches in girth and began to change colour, and two days afterwards it opened naturally. Inside the pod I could find no trace of a single seed, though it was full of chaff and shrivelled ovules, together with a large number of

fine fluffy fibres, or downy threads loosely woven together, completely choking up the middle of the pod along its whole length. After the pod had dried these fibres became quite glossy in appearance, and reminded one somewhat of cotton.

The two remaining crosses, Lycaste Skinneri crossed with the pollen of Lælia anceps on 15th February, 1897, and Lycaste Skinneri crossed with Brassavola glauca, on 16th March, 1897, appear to be doing well, and are gradually increasing in size.

I have recently set two pods on Oncidium flexuosum, crossed with the pollen of Odontoglossum crispum, on 11th August, 1897, which appear to be healthy and full of vigour. For the present I think any speculations as to the probable outcome of these curious crosses, however interesting to contemplate, would serve no useful purpose. For not only have these *fertile* seeds to pass through the uncertainties of germination before plants are obtained, but even then they may resolutely refuse to flower, as in the case of many well-known crosses between Paphiopedium and Phragmipedium, and even if this much desired consummation be reached, there is still the possibility that they may not flower as true hybrids.

C. C. HURST.

Burbage Nurseries, Hinckley.

## CALENDAR OF OPERATIONS FOR DECEMBER.

DAYLIGHT is such a scarce commodity during this month that there is little opportunity to do much other than the necessary watering. Fortunately, in one sense, there is little to do, the chief thing being to keep the temperatures as even as the fluctuations of the weather outside will admit, and renew the air as often as possible. The temperatures of all the divisions will reach their lowest point during this month, and should, with little variation, be as under :—

| | | |
|---|---|---|
| Stove or East Indian house ... ... | Day, 65°, | Night, 60°. |
| Cattleya and Mexican house ... ... | ,, 60°, | ,, 55°. |
| Intermediate house ... ... ... | ,, 58°, | ,, 53°. |
| Masdevallia house ... ... ... | ,, 53°, | ,, 50°. |
| Odontoglossum house ... ... ... | ,, 50°, | ,, 45°. |

As before stated, these figures represent the temperatures to be secured by fire heat alone; a rise above these through natural causes will be to the advantage of the plants rather than otherwise. The day temperatures should be maintained until the fires are done up for the night, allowing the mercury to recede the other five degrees during the night, and be raised again as soon as possible when the working hours arrive again.

Unfortunately, for the plants and their growers, houses are often used

for Orchids that were originally built for another and a cooler class of plants, consequently the piping is insufficient to ensure the requisite degree of warmth without unduly heating the pipes, hence on the occasion of hard weather a dry and scorching atmosphere is created, althogether unfitted to the welfare of the choice and oftentimes costly inmates. What to do under these circumstances is a sore puzzle to the grower. In the first place he tries to maintain the temperature, and then in order to counteract the dryness of the air throws water about to produce moisture, which usually ends in remedying one evil and promoting another. Under these circumstances I would recommend that the temperatures be kept lower during a spell of severe weather, so that the above state of affairs does not occur. The evil of over damping during winter, when fire heat is so much in evidence, is two-fold in its action; first, we get a superabundance of moisture in the air, and second, the moisture condenses on the bars and rafters, forming drips, which, except under the most favourable circumstances, falls on the plants, and causes irreparable damage. In most modern built houses drip-proof bars and rafters are used, which carry off the condensed moisture, but even then a surcharged atmosphere is not at all beneficial at this season, this often proving the forerunner of the much dreaded "spot." The wisest, and in the long run the cheapest, method is, when a new house is being built, to place under the stages a much larger quantity of piping than is usually considered sufficient, for the greater the heating surface, the lower proportionately will be the temperature of the whole, yet the aggregate will be sufficient to raise the temperature of the house to the required degree, without the usual fiery sensation so much disliked by us as gardeners.

Referring again to damping, I may say that in most houses there are certain parts that become dry much sooner than others, and consequently to keep them moist water has to be thrown on them frequently. This is not always wise providing there is sufficient moisture in the air without that arising from these sources, for, as before stated, an over abundant supply of moisture cannot be too strongly condemned; hence it is often better to allow these dry regions to remain dry than to damp them frequently and create more moisture. The ashes or other moisture holding material beneath the pipes and stages should be damped when showing signs of becoming dry, but all quick evaporating surfaces should only be damped on favourable occasions. In the matter of airing, the Cool houses should, excepting during very severe weather, always have a chink of air on, as these, having less fire heat to create a circulation, become "stuffy" much sooner than the warmer departments. The latter should be ventilated on all favourable occasions, daily if possible, if only for an hour or so. The question of watering during winter has already been dwelt upon, but I must again urge the necessity of temperance and moderation in this respect.

Several large importations of Odontoglossum crispum have recently been received, and distributed by auction to numerous collections, and mayhap a few persons unacquainted with their cultivation were tempted by the low prices to purchase a lot or two, for personal experiment, and possibly ultimate profit. To these latter a hint or two may be of service, for failure in the first instance would probably deter them from making further and more extended purchases of this lovely cool Orchid. I am not of the opinion that this is an easy Orchid to grow, as some would have us believe. Not but that it is easy enough when one has the right place and other necessary attributes to grow it in; but in the majority of cases one or other are lacking, and only a moderate amount of success is obtainable. Newly-imported pieces, as soon as received, should be placed in a Cool house on something moist, either on the ashes on the stage or on moss previously spread on a mat, each piece so placed that when they break away the growth has a chance of assuming an upright position. No water should be thrown over them, especially at this time of the year, or the bulbs may rot, for if the material they are laid on is in a well-moistened condition, none will be needed. If, however, it should be wanted, remove the pieces, and then damp the material. Amateurs, as a rule, are so anxious to see some little progress in their newly-acquired treasures, that they are apt to pot them up prematurely, to the decided disadvantage of the wished-for success. None should be potted until there is a reasonable possibility of roots appearing, or have already done so, and as under ordinary circumstances roots will not appear until the new growth has made some little headway, it will naturally be some time before this occurs. The objection to potting them before root action is imminent is that the temptation to water the compost when dry is irresistible to most people, and hence mischief is done.

When any are found in a suitable condition to operate upon, pots, of only just sufficient size to accommodate the bulbs, should be crocked to within an inch of the rim, adjusting the plant in a position most favourable to the development of the prospective bulbs, and fill around with a mixture of peat and moss in the proportion of two to one. It need not necessarily be mounded up without the exigency of the case demands, but it should be made moderately firm to hold the bulbs in required position securely. Very little water will be necessary for some considerable time after being potted, a slight sprinkling from a rose-can now and again to keep the moss alive being sufficient until root action becomes general and vigorous. In this way the whole batch will not be done at once, as they will not all come on into condition together; but the little extra care and trouble bestowed upon them will be well repaid by the increased success that will follow the adoption of this method.

Odontoglossum grande, having now done flowering and finished up its

bulbs, should have less and less water given it, and be gradually brought to a state of rest. The same remark applies to O. citrosmum, which in some instances is already showing the new breaks from which issue the flower-spikes, for to give these much water between this and the appearance of the spikes will probably result in their producing none. O. Uroskinneri is now growing and rooting freely, and should in consequence be kept moderately moist, and may even now be repotted or surfaced if in a condition to warrant such a proceeding. Our plants are grown in a corner of the Masdevallia house, the moist and warmer atmosphere of which seems to fulfil its requirements. O. pulchellum, now in bloom, is one that does not relish a saturated base for long at a time, and hence, when shifted into another pot, should only have a very small quantity of potting material supplied it. It is a nasty subject to shift, and when doing well, although apparently in need of a larger receptacle, should be looked at twice before deciding to move it. It succeeds along with the crispums fairly well.

Masdevallias generally should be kept rather dry at the root all through the winter months, and, as will be noticed by the tabulated temperatures, a trifle warmer than the Odontoglossums. M. tovarensis is now in bloom, its snow-white flowers being very acceptable at this dull season. Anyone desirous of producing a pink-tailed variety has only to fumigate with Richard's XLAll to obtain their wish. M. Wageneriana, muscosa, simula, and several other small-leaved kinds, with Pleurothallis macroblepharis and Barberiana, do better in the cooler atmosphere of the Odontoglossum house. Other Peurothallis grow along with the Masdevallias, and in like manner should be kept rather dry. P. Roezlii is grown here along with Miltonia vexillaria, and has this season made two sets of leaves. Last season it had seven spikes of its peculiar purple-tinted blooms. Plants of the above Miltonia should be raised to within eight or ten inches of the roof glass, and kept moderately dry, only giving a small dose of water now and then to prevent the rooting material becoming too dry. Other species of Miltonia should have similar treatment so far as watering is concerned, though, as few of them are in a state of growth, it is unnecessary to bring them near the glass.

The old Cœlogyne barbata is not a plant to excite interest in any but the most enthusiastic lover of Orchids, having few claims to warrant its cultivation for decorative purposes; yet its dusky-coloured and bearded lip generally causes a smile of mild pleasure when seen in bloom on a healthy plant. It is an intermediate subject, and when once established seldom wants shifting or top-dressing. The growths, as they extend beyond the receptacle, may be twisted round on to the soil, and pinned down with a bent piece of copper wire. It should now be kept in a fairly dry condition, water in abundance being only needed when the roots are in an active state. C.

Gardneriana, also in bloom, is of quite a different character, as its racemes of snow-white blooms are really of a meritorious order. It should be grown in a pot, adding a little loam fibre to the peat and moss for it to root in. It does not make many roots, and on this account is somewhat difficult to establish, firm potting being very necessary. An intermediate temperature suits its requirements, keeping it fairly moist at all times.

The deciduous Calanthes, C. vestita, × Veitchii, and others of this section will now be coming into bloom, their nodding plumes adding greatly to the attractiveness of our stoves, although within the fog radius their beauty is short-lived if a visitation of fog occurs whilst they are in flower. Twice in eight years only have we had any worth looking at, and now we have concluded that it is no use attempting their cultivation in this district with any prospects of getting an adequate reward for our trouble. Even when the flowers expand, the dullness of the atmosphere prevents the development of their natural colours. The plants from now onwards will need little or no water, and after the spikes are cut may be laid on their sides in a dry, warm corner, or other suitable position, though if under a stage they should be removed far enough from the hot-water pipes not to become parched from their influence. The varieties Turneri and Regnieri do not come into bloom just yet, and for this reason are better adapted for cultivation in or near large towns.

The latter is one of the parents of a very useful generic hybrid—viz., Phaio-calanthe × Arnoldiæ, which is much easier to grow than either it or its other parent, Phaius grandifolius, and combines in its flowers the good qualities of both. Seedlings of it are easily and quickly raised, and any-one desirous of raising hybrid Orchids should certainly give these two genera a trial. As the offspring are not deciduous, water is needed more frequently during the winter than Calanthes require, though a dry state of the root for a few days will do no harm, for the old favourite, Phaius grandifolius, thrives much better when kept moderately dry during the winter than when the soil is continually saturated, as, also, do most other species of Phaius. Even P. tuberculosus is all the better for being allowed to become dry before giving more water, for I find that P. × Cooksonæ, which has blood of the latter in its composition, thrives better under a moderately dry treatment than when kept too moist. It is now coming into bloom, likewise P. grandifolius, both of which will benefit through having a weak solution of farm-yard manure given when in need of water. The latter will grow in almost any plant stove if given a small amount of shade during the summer, but the former must have the tempered light of the Phalænopsis house to be a success.

Dendrobium nobile, and numerous hybrids from it, with D. crassinode, Wardianum, . primulinum, and Findlayanum will now be swelling their buds preparatory to flowering, but if any respect for the plants be

entertained they should on no account be hurried into bloom by placing the plants in strong heat. The temperature of the Cattleya house will suit them all, excepting the latter, which usually remains in the warm house throughout the year. A trifle moister condition at the root should prevail whilst developing and carrying their blooms, afterwards reverting to the former practice of only giving enough water to prevent or check shrivelling. D. aureum commenced flowering last month, and individual plants will continue to come on into bloom throughout the winter. This species is a very unsatisfactory one to deal with, the winter, or resting period, proving such a troublous time to its being, for healthy, well-grown bulbs will then rot off at the base without any apparent cause. No doubt it loves strong heat at all times, also abundance of light, and, unfortunately for it and us, we can only supply the former. D. Jamesianum—not the short-bulbed form, D. infundibulum, which is often known under the above name—is now flowering, its blooms being a miniature reproduction of those of D. formosum. It grows well at the cool end of the Cattleya house when it is always kept in a moist condition.

As a last piece of advice I must urge the necessity of removing the spikes of Phalænopsis immediately (or before) the last flower has burst from the bud state. It is probably due in a great measure to this course of action that our plants prove so amenable to cultivation, for we—when the fog is not beforehand with us—cut the spikes off very early in their career, and place them in water, and the undeveloped flower buds usually unfold themselves in this condition almost as well as they would on the plant.

## MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

At the meeting of this Society held at the Coal Exchange, Manchester, on November 4th, there was a fine display of Orchids, the awards numbering seven First-class Certificates, 16 Awards of Merit, and three Cultural Certificates.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), staged a very nice group, to which a Vote of Thanks was accorded. Noticeable in this group were Cypripedium × Leeanum giganteum, C. Charlesworthii marginatum, C. × Leeanum virginale, and Odontoglossum × Andersonianum, all of which received Awards of Merit. There was also a very well-grown plant of Cypripedium × Arthurianum, which received a Cultural Certificate, and several showy and well-flowered plants of Cattleya labiata.

G. Shorland Ball, Esq., Ashford, Wilmslow (gr. Mr. Hay), showed a mag-

nificent plant of Cypripedium insigne Sanderæ carrying six fine blooms, and in the pink of condition (First-class Certificate and Cultural Certificate); C. × Alfred Hollington, the finest flower we have seen of this variety (Award of Merit); C. × Leanum magnificum, an immense flower measuring three inches across the dorsal sepal and being of exactly the same form as C. Spicerianum, but with the true Leeanum colouring (First-class Certificate); Dendrobium Phalænopsis album, a beautiful flower of excellent form and substance with pure white petals, sepals, and lip, but showing the faintest hair-like streaks of light pink in the throat (First-class Certificate), and the interesting and pretty Lycaste Youngiana with eight blooms (Award of Merit).

S. Gratrix, Esq., West Point, Whalley Range (gr. Mr. McLeod), showed Cypripedium × triumphans with fine bold flower (First-class Certificate); C. insigne giganteum (Award of Merit), and C. insigne Balleæ with a very weak flower.

J. Leemann, Esq., West Bank House, Heaton, Mersey (gr. Mr. Edge), showed Vanda cœrulea with a magnificent spike of flowers of the very finest form and colour (First-class Certificate); Cypripedium × œnanthum superbum (Award of Merit); a good Cymbidium Traceyanum (Award of Merit), and another plant of the same carrying four large spikes of flowers (Cultural Certificate).

T. Statter, Esq., Stand Hall, Whitefield (gr. Mr. Johnson), showed Cypripedium × Leeanum giganteum, the best form of this fine variety, and a well-flowered plant (Award of Merit); C. × Phœbe (Award of Merit); C. insigne Sanderæ (First-class Certificate); C. × Leeanum Albertianum, a very distinct form, with the markings on the dorsal sepal very dark and profuse (Award of Merit), and Cattleya Dowiana aurea (Award of Merit).

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Lofthouse), showed Cattleya × Le Czar, a natural hybrid from C. granulosa and C. labiata. The lip is very flat and of a uniform rich dark cerise and the whole flower very pleasing (First-class Certificate).

E. J. Sidebotham, Esq., Erlesdene, Bowdon (gr. Mr. Shiner), showed a good Cattleya labiata, to which an Award of Merit was given.

H. Worthington, Esq., Abbey Lawn, Whalley Range (gr. Mr. Went), sent the handsome Catasetum × splendens Worthingtonianum, to which an Award of Merit was given.

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), sent a very fine selection of Cypripedium insigne, the best of which was a variety named magnificum, the distinctive feature being the peculiar markings on the upper portion of the dorsal sepal, the blotches being much larger and of a paler colour than in the typical variety. This received an Award of Merit.

W. Duckworth, Esq., Shaw Hall, Flixton (gr. Mr. Tindale), showed a good plant of Cattleya × Mantinii.

W. A. Gent, Esq., Brooklands, showed two very pretty forms of Dendrobium Phalænopsis named albens and roseum, also D. × Cassiope and Cattleya × Mantinii.

G. W. Rowe, Esq., Clarence Drive, Timperley, showed a good plant of Cattleya × Hardyana, which, as regards variety, was not quite up to the standard of the better forms of this hybrid.

Mr. J. Anderson, Wallace Avenue, showed a pale form of Lælia tenebrosa, and several Cattleyas.

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We are indebted to two esteemed correspondents for the following corrections of errors, which have crept into preceding reports :—

| | | | |
|---|---|---|---|
| Page 220, line | 9. | Cancel "L-c. × D. S. Brown, &c." to end of paragraph. |
| ,, ,, ,, | 14. | For "Mrs. E. Ashworth" read "Mrs. S. Gratrix," and add —"They also showed Cypripedium × Gertrude Hollington (A.M.)" |
| ,, ,, ,, | 17. | For "Prince of Wales," read "Princess of Wales." |
| ,, ,, ,, | 36. | For "four," read "three," and (next line) cancel "Cattleya Mossiæ rubens," to end of line. |
| ,, 283, ,, | 12-14. | This should read "Dendrobium speciosissimum received a First-class Certificate, and Cattleya Lueddemanniana a Cultural Certificate." |
| ,, ,, ,, | 19. | For "Award of Merit," read "First-class Certificate." |
| ,, 285, ,, | 15. | Read "Cypripedium Lawrenceanum atrorubens received a First-class Certificate." |
| ,, 316, ,, | 8. | After C. × triumphans," add "(First-class Certificate.)" |
| ,, ,, ,, | 24. | Cancel "and the occasion," &c., to end of paragraph. |
| ,, ,, ,, | 35. | Cancel "and to this," &c., to end of paragraph. The Gold Medal of the Society, we are assured, does not exist. |
| ,, 345, ,, | 5 | from bottom. For "Cypripedium insigne, Nellie Don," read "C. i. Wm. Millie Dow." |

## ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

At the meeting of the Royal Horticultural Society, held at the Drill Hall, James Street, Westminster, on November 9th, Orchids were not as numerous as usual, though several striking things were included among the exhibits. The day, however, was very dark and foggy, and the plants were not seen to the best advantage.

The Right Hon. Joseph Chamberlain, M.P., Highbury, Birmingham (gr. Mr. Smith), sent a group of six very fine things, to which a Silver Banksian Medal was given. It comprised the handsome Lælio-cattleya × Semiramis, L.-c. × Sallieri, a fine, richly-coloured Cattleya labiata, C. ×

massiliensis (of which an account appears on another page), C. × Miss Endicott (C. maxima × Loddigesii), a very pretty hybrid, most like the former, but firmer in texture, the sepals and petals light rose, and the lip white, tinged with pale rose and veined with purple in the centre, and the beautiful C. × Fabia in splendid condition, which secured a First-class Certificate.

G. Shorland Ball, Esq., Ashford, Wilmslow (gr. Mr. Hay), also received a Silver Banksian Medal for a small group of very fine things, including two fine plants of Masdevallia Veitchiana, Lycaste Youngii, the beautiful Dendrobium Phalænopsis album, Cypripedium × Niobe, C. × Moensii, a fine C. × Alfred Hollington, C. × Leeanum magnificum, to which an Award of Merit was given, the massive Cypripedium insigne giganteum, and two fine plants of the beautiful C. i. Sanderæ, one of which, bearing six flowers, received a Cultural Commendation.

J. T. Bennett Poë, Esq., Holmewood, Waltham Cross (gr. Mr. Downes) sent Vanda Sanderiana Holmewood variety, with very broad segments, giving the flowers a nearly circular outline, and a good Cypripedium of unknown parentage.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), sent a pretty light form of Cattleya × Jupiter.

H. Tate, Esq., Allerton Beeches, Liverpool, sent Cypripedium × allertonense (C. villosum × bellatulum), and the striking form of C. insigne, in which the lower sepal exactly resembles the dorsal one in size, colour, and markings. This was described at page 11 of our third volume, and is evidently constant in character.

W. Vanner, Esq., Camden Wood, Chislehurst (gr. Mr. Robbins), sent Odontoglossum crispum Dormanianum, a finely spotted form, Cypripedium × Vanneræ and × Eyermanianum superbum, also a stand of cut Orchids, including Cypripedium Charlesworthii, Stonei, insigne Sanderianum, × Io, × Niobe, × Harrisianum superbum, × Pitcherianum, Selenipedium × Schrœderæ, &c.

Mrs. S. Wood, Moorfield, Glossop, sent a form of Cypripedium × Alcides.

Messrs. James Veitch & Sons, Chelsea, staged a group of fine hybrids, to which a Silver Flora Medal was given. It contained the beautiful Lælio-cattleya × Decia, L.-c. × Pallas, L.-c. × Lady Rothschild, L.-c. × Statteriana, L.-c. × Daphne (C. Mossiæ ♀ × L.-c. × Schilleriana ♂) a very pretty novelty with blush white flowers, and the lip purple in front with a yellow disc, Cattleya × Eurydice, C. × Portia (C. Bowringiana ♀ × labiata ♂), Cypripedium × Niobe, C. × Euryades, C. × Tityus, C. × Actens (C. × Leeanum ♀ × C. insigne Sanderæ ♂), somewhat resembling the former but more yellow in colour, &c.

Messrs. Hugh Low & Co., Upper Clapton, staged a group of good things, including some fine Vanda cœrulea, Cypripedium × Niobe, C. × Leeanum, the beautiful C. bellatulum album, &c. The fine white Calanthe × Veitchii alba received a First-class Certificate.

Messrs. F. Sander & Co., St. Albans, received a Silver Banksian Medal for a fine group, including some fine forms of Cattleya labiata, C. Dowiana aurea, Lælio-cattleya × broomfieldensis, a well-flowered pan of Sophronitis grandiflora, Miltonia vexillaria Leopoldi, Lycaste Skinneri, Cypripedium insigne Sanderæ, Calanthe bella, Lælia autumnalis delicata, &c.

Messrs. W. L. Lewis & Co., Southgate, staged a group of fifty Lælia pumila, including a number of fine forms, also Mormodes pardinum and its variety unicolor, Odontoglossum Rossii majus, and Cattleya labiata Lewisii, a beautiful white form with the lip purple margined with white, the latter receiving an Award of Merit.

## ORCHID PORTRAITS.

ACINETA BARKERI.—*Gard. Mag.*, Nov. 6, pp. 696, 697, with fig.

CŒLOGYNE SANDERÆ.—*Journ. of Hort.*, Nov. 11, p. 451, fig. 68.

CYNORCHIS GRANDIFLORA, Ridl.—*Bot. Mag.*, t. 7563.

CYPRIPEDIUM VENUSTUM MEASURESIANUM.—*Journ. of Hort.*, Nov. 18, p. 475, fig. 71.

TAINIA PENANGIANA, Hook. f.—*Bot. Mag.*, t. 7563.

TRICHOPILIA COCCINEA, Warsc.—*Rev. Hort. Belge*, Nov., p. 256, with plate. The plant here represented is T. suavis, Lindl., and is so labelled on the plate. This plate, and the one issued with the August number, incorrectly labelled T. suavis, should be transposed in binding.

ZYGOPETALUM JORISIANUM, Rolfe.—*Gard. Mag.*, Nov. 20, p. 728, with fig.

## CORRESPONDENCE, &c.

E. A. B., Oxford. Lælio-cattleya × Schilleriana, a good typical form

G. H. B., Heeley. 1, Odontoglossum grande, a good typical form. 3, O. Rossii, a form with very pale yellow crest. 2, Oncidium Jonesianum. 4, possibly O. Forbesii, but exceptionally small and undeveloped.

J. W. P., Croydon. Aëranthes grandiflorus.

## ERRATUM.

Page 351, line 21. For "Cypripedium × Clio," read "C. × Clotho."

# INDEX.


ACANTHOPHIPPIUM javanicum, 28.
Acineta Barkeri, 318.
Ada aurantiaca × Lælia glauca, 179.
Aëranthes dentiens, 164.
Aëranthus carpophorus, 221.
Aërides, 57, 215.
Aërobion superbum, 20.
Albinos, 246.
Amateur's notes, 11, 102, 167, 258.
Ammonia, 43, 106, 108, 251, 272, 324 ; (carbonate of), 234, 271 ; (nitrate of), 271; (phosphate of), 271.
Angræcum bilobum var. Kirkii, 55 ; Brongniartianum, 19, 20; citratum, 58; eburneum, 19, 20, 21 ; e. superbum, 20; e. virens, 20 ; Giryamæ, 19, 21 ; imbricatum, 84 ; Mooreanum, 126 ; sesquipedale (× Lælia purpurata), 180, 366 ; Smithii, 55 ; superbum, 19, 20 ; virens, 19, 20.
Angræcums, 55.
Anguloa eburnea, 316.
Anguloas, 171.
Anœctochilus Sanderianus, 191.
Ansellia africana, 156.
Ants and Orchids, 70.
Apostasia Lobbii, 237.
Apostasieæ, 237.
Appleton, W. M., Esq.'s collection, 297.
Arachnanthe Cathcartii, 229; Lowii, 307.
Arundina bambusæfolia, 173, 344.

BARKERIAS, 148, 279.
Bartholina pectinata, 306.
Bees carrying pollinia, 134.
Beetles, minute, 228.
Bletia hyacinthina, 60; (× Cœlogyne cristata alba), 140; longipes, 112.
Blinds, lath roller, 87.
Bolleas, 55.
Books, notices of, 236.
Bordeaux mixture, 276.
Brassavola venosa, 30.
Brassia Lawrenceana longissima, 254, 318.
Brasso-cattleya × Lindleyana, 123.
Bulbophyllum auricomum, 30; barbigerum, 220, 306; Dayanum, 61; Ericssoni, 123; occultum, 306; ptiloglossum, 208.
Burberry, Mr. H. A., 289.
Butterfly fertilising Disa, 103.

CALANTHE × albata, 6, 10, 41, 79, 115; × Baron Schröder, 115, 124; × Eclipse, 317; × jucunda, 30; × nivea, 30; × Novelty, 41; × revertens, 30; × Veitchii alba, 376; × V. lactea, 30; vestita, 69.
Calanthe, hybrid between the evergreen and the deciduous sections, 6, 10, 41.
Calanthes, 90, 115, 248; (at Arundel Castle), 45; (deciduous), 371.
Calendar of Operations, 22, 56, 87, 117, 146, 171, 212, 247, 278, 309, 340, 368.
Catasetum barbatum, 198; × splendens, 32; × s. Worthingtonianum, 29, 373.
Catasetums, 151.
Carbonic acid, 272.
Catlælia, 239; × Darwiniana, 239; × Elsteadensis, 239; × Ghislainiæ, 239; × Ino, 239.
Cattleya Aclandiæ alba, 251, 260, 338, 356 ; × Adonis, 350 ; × Astrea, 359 ; × Ballantiniana var. Rajah, 184 ; Bowringiana gigantea, 353 ; B. Wild's variety, 350 ; × Bowringiano-blesensis, 360 ; × Breauteana, 360 ; × Brymeriana, 284 ; × Chloris, 322 ; citrina, 156 ; Dawsoni, 265 ; Dormaniana, 343 ; Dowiana, 284, 321 ; D. aurea, 281, 317, 363, 373 ; D. Johnsoni, 346 ; D. Mrs. Gratrix, 345 ; × dubia, 360 ; × dubbiosa, 360; × elata, 123 ; Eldorado Wallisii, 285 ; × Euphrasia, 318 ; × Eurydice, 375 ; × Fabia, 375 ; × Fernand Denis, 359 ; × Feuillati, 360 ; Gaskelliana, 204, 205 ; G. alba, 284 ; G. Fairy Queen, 283 ; G. Nellie, 314 ; G. Sunray, 256 ; × Gaudii, 360 ; gigas, 227, 296 ; granulosa aurea, 254 ; g. Schofieldiana, 317 ; × guatemalensis, 111 ; × Hardyana, 208, 283, 346, 363 ; × H. alba, 319 ; × H. Boltoniana, 345 ; × H. Lowiæ, 319 ; × H. magnifica, 350 ; × H. striata, 258 ; × Harrisii, 35 ; Harrisoniana, Comte Visart's var., 208 ; × hybrida, 333 ; × h. picta, 334 ; × Imperator, 365 ; intermedia, 163 ; (abnormal) 189 ; i. alba, 182 ; × intertexta, 124 ; × intricata var. Rossii, 169 ; labiata, 232, 297, 312, 355, 373 ; (malformation of), 322 ; (seed of), 83 ; (× Sophronitis grandiflora), 208 ; l. alba, 28, 353 ; l. Ashford variety, 28 ; l. atrata, 347 ; l. Elsie, 347 ; l. Lewisii, 376; l. marmorata, 353 ; l. Peetersiana, 346 ; l. R. I. Measures's variety, 347 ; l. Samuel Gratrix, 346 ; Lawrenceana, 130; × Le Czar, 77, 365, 373 ; Leopoldi, 315 ; Loddigesii superba, 61 ; × Lord Rothschild, 363 ; Luddemanniana, 265, 283, 314, 316, 320, 374 ;

Cattleya—

× Mantinii, 346 ; × M. nobilior, 347 ; × Mars, 349 ; × Mary Gratrix, 315 ; × massiliensis, 357, 375 ; maxima, 346 ; × Melpomene, 251, 318 ; Mendelii Madonna, 191 ; M. (× Lælia Digbyana), 297 ; × Minucia, 291 ; × Miranda, 62, 80, 124, 340 ; × Miss Endicott, 375 ; Mossiæ, 163, 224 (bulbs superposed) 290 ; (× Angræcum sesquipedale), 180, 366 ; (white forms of), 191 ; M. Admiral Bradshaw, 220 ; M. bellissima, 252 ; M. E. Ashworth, 220 ; M. gloriosa, 220 ; M. "In Memoriam Richard Curnow," 222 ; M. magnifica, 220 ; M. Mrs. S. Gratrix, 220, 374 ; M. Rappartiana, 219 ; M. Rappart's variety, 193 ; M. Reineckeana, 252 ; M. Wageneri, 182, 195, 220, 227 ; M. Warburtoni, 252 ; × Olivia, 351 ; × picta, 334 ; × picturata, 334 ; × Portia, 375 ; Queen-Empress, 197 ; Rex, 173, 252 ; Rollissonii, 296 ; × Rossii, 191 ; Schilleriana, 283 ; S. Hardy's var., 188 ; Schœderæ, 98 ; S. alba, 156, 217 ; Skinneri alba, 182 ; superba, 254 ; Trianæ, 36, 271 ; (varieties), 71 ; T. Backhouseana, 97 ; T. delicata, 296 ; T. eximia, 94 ; T. Imperator, 94 ; T. pallida, 98 ; T. zonata, 72 ; × undulata, 254 ; × Victoria-Regina, 197 ; Warneri, 194, 354 ; W. magnifica, 285 ; Warscewiczii, 76, 120, 172, 225, 227, 252, 296 ; (× Lælia Digbyana), 297 ; W. delicata, 296, 315 ; W. gigantea, 267 ; W. Mrs. E. Ashworth, 255 ; W. Sanderiana, 317.

Cattleya albino, varieties of, 245 ; chemical composition of, 233, 270 ; × Cypripedium, 139 ; diphyllous, 266 ; flowering from rhizome, 76 ; seedlings, 298.

Cattleya-fly, 228.

Cattleyas, degeneration of, 232, 266.

Certificates, 302 ; Awards of Merit, 68, 303 ; Botanical Certificates, 68 ; Cultural Commendations, 101, 303 ; First-class Certificates, 302 ; 332 ; Second-class Certificates, 68, 303.

Certificated Orchids, drawings of, 100 ; figures of, 43 ; paintings of, 40, 166.

Chysis × langleyensis, 161.

Cirrhopetalum Collettii, 254 ; Curtisii, 299 ; elegantulum, 183 ; graveolens, 135 ; nutans, 221 ; pulchellum, 299 ; robustum, 134, 135 ; Thouarsii, 306.

Clarke, Colonel Trevor, death of, 134.

Cleisostoma Zollingerianum, 208.

Cochlioda × miniata, 63 ; vulcanica maxima, 63.

Cœlogyne asperata, 161, 164, 190 ; barbata, 370 ; cristata, 92, 118 ; Dayana, 186 ; elata, 155 ; Gardneriana, 371 ; Lowii, 164 ; Micholitzii, 249 ; pandurata, 60.

Cœlogynes, 92, 150.

Cogniaux and Goosens' *Dictionnaire Iconographique des Orchidées*, 354.

Colax jugosus × Zygopetalum × Perrenoudii, 207.

Colouring matters, 234 ; amaranthin, 234 ; anthocyanin, 234 ; colein, 234 ; erythrophyll, 234 ; œnolin, 234

Cookson, Norman C., Esq., Veitch medallist, 258.

Correspondence, 32, 64, 96, 128, 160, 192, 224, 256, 288, 320, 352, 376.

Coryanthes, 70, 248.

Crawshay, De B., Esq.'s collection, 265.

Cryptophoranthus Dayanus, 348.

Cryptochilus sanguineus, 168.

Cycnoches chlorochilon, 151.

Crosses, curious, 139, 179, 197, 224, 365 ; false, 326 ; generic, 327 ; multiple, 243 ; reversed, 301.

Cymbidium Dayanum, 356 ; Devonianum, 155 ; eburneum 123 ; e. Dayana, 357 ; e. Dayi, 356, 357 ; Lowianum, 25 ; L. concolor, 131, 224 ; Simonsianum, 356, 357 ; Tracyanum, 373 ; × Winnianum, 40.

Cymbidium seedlings, 82.

Cymbidiums, 115, 148.

Cypripedieæ, 237.

Cypripedium × Actens, 375 ; × A. de Lairesse, 286 ; × Alfred Hollington, 316, 373 ; × allertonense, 375 ; × almum, 275 ; Appletonianum, 288 ; Argus (× Exul), 141 ; (with three lips), 132 ; × Arthurianum, 372 ; × Ashburtoniæ, 299 ; (× Godefroyæ leucochilum), 141 ; × A. roseum, 35 ; × Balmedianum, 286 ; × barbato-bellatulum, 41 ; barbatum (× niveum), 243 ; × Baron Schröder, 29, 36 ; × beechense, 199 ; × bellatulo-vexillarium, 184 ; bellatulum, 311 ; (culture of), 197, 236 ; (× Exul), 141 ; b. album, 315 ; Boissierianum from seed, 362 ; × Bryani superbum, 347 ; Calceolus (× Phragmipedium × Sedenii candidulum), 180, 365 ; × calanthum, 36 ; × callo-Rothschildianum, 286 ; callosum (× microchilum), 242, 243 ; c. Sanderæ, 182 ; Chamberlainianum, 238, 361 ; × Chapmanii, 170, 189, 218, 220 ; × C. Gratrix's variety, 315 ; × C. magnificum, 170, 184, 189, 220 ; × Charles Richman, 34, 41 ; Charlesworthii (abnormal), 44 ; (× C. insigne), 240 ; C. Dulcote variety, 348 ; C. marginatum, 346, 372 ; ciliolare, 199 ; ciliolare × Curtisii, 199 ; × Clotho, 376 ; × conco-bellatulum, 169, 189 ; × conco-callosum, 275 ; × conco-Lawre, 275 ; × Corningii, 241 ; Curtisii, 239 ; (and its allies), 199 ; × Cymatodes, 199 ; × Dautheri (sport), 52 ; × D. Rossianum, 1 ; Dayanum, 324 ; × Denisianum, 257 ; × Druio-Lawrenceanum, 349 ; × E. Holt, 219 ; Elliottianum, 354 ; × Enid, 93, 161 ; × Eucharis, 32, 240 ; × Euryale, 275 ; Fairrieanum, 42, 206 ; Fred. Hardy, 17, 18, 77 ; × François Peeters, 41 ; ×

Cypripedium—

Gertrude Hollington, 374; × giganteum Harefield Hall variety, 345; × Godefroyæ, 75, 221 (× niveum), 243, 327; × G. leucochilum, 75, 218, 253; × Gowerianum, 162, 275; × gracile, 287; × Gratrixianum, 285; × Harrisander, 284; × Harrisianum superbum, 253, 346; × Haynaldo-Chamberlainianum, 350; × hirsuto-Sallieri, 124; insigne, 62, 322, 347 (with three pouches) 34, (with twin spikes) 3, (yellow) 66; i. Ballianum, 3; i. Ernestii, 346; i. Fœrstermanni, 33; i. giganteum, 2, 373; i. Laura Kimball, 316; i. magnificum, 373; i. montanum, 26; i. pulchellum, 52; i. Pynaerti, 7; i. Sanderæ, 346, 373, 375; i. Sanderianum, 34; i. Statterianum, 346; i. Upland's var. 35; i. Wm. Millie Dow, 345, 374; i. Youngiæ, 35, 94; × J. Gurney Fowler, 189; × J. G. F var. Rhemba, 218; × Juno, 346; × Lachmee, 199; × Lady Isabel, 317, 318; × Lawrebel, 253, 346; Lawrenceanum atrorubens, 285, 374; L. Hyeanum, 42, 315, 346; × Lebaudyanum, 63, 187; × Leeanum, 36, 326; × L. Albertianum, 373; × L. giganteum, 372, 373; × L. magnificum, 30, 373, 375; × L. Prospero, 62, 65; × L. virginale, 372; × Leonidas, 94; × Leysenianum, 41; × Lilian Greenwood, 41, 61, 67; × Loewegrenianum, 317; × Mabeliæ var. Lord Derby, 315; × Marchioness of Salisbury, 41; × massaianum, 283, 286, 374; × Measuresiæ, 222, 253; × melanthum, 287; × Météore, 41; × Moensii, 316, 317, 345, 346; × Mrs. C. Maynard, 29; × Mrs. D. Solomon, 62; × Mrs. E. V. Low, 223, 253; × Muriel Hollington, 37; × Neptune, 286; nigritum, 239, 323; × nitens, 35; niveum (with twin spikes), 3; × Norrisianum, 363; × Oakes Ames, 153; × œnanthum superbum, 283, 373; Parishii, 284; philippinense, 220; × Phœbe, 373; × polychromum, 28; Poyntzianum, 288; × Prewettii, 128; purpuratum var. obscurum, 324; × Quies, 93; × Ranjitsinhji, 227, 254; × Regina, 28; Reginæ, 196; R. album, 196; × Richmanii, 61; × Rolfei, 93; × Rossianum, 2; Rothschildianum, 57, 253; R. giganteum, 182; × rubescens, 227, 254; × Sallieri, 32, 51; × S. aureum, 52; × S. Hyeanum, 51; Sanderæ, 85; × siamense, 288; × Smithii, 275; Spicerianum, 16, 242, 243, 310; (albino), 33; S. virescens, 347; superbiens, 199; × superciliare × Hookeræ), 35; × Sylvia, 275; × Tautzianum, 170, 364; × tessellatum, 34, 93, 275, 299; tonsum giganteum, 345; × triumphans, 316, 373, 374; × Vanninii, 132, 196; Victoria-Mariæ, 66, 98, 226, 238; villosum, 85; × Vipani, 242; × V. Corningii, 241; virens, 240; × William Lloyd, 347; × Wootonii, 93; × Youngianum, 257; × Y. superbum, 97.

Cypripedium, 237; concolor section, 151; × Cattleya, 139; × Lælia, 139; records, 240; sections of, 237; seedlings, 170, 298; (curious), 242; (at Bury), 141.

Cypripediums, 213; natural hybrid, 51.

Dendrobium × Ainsworthii intertextum, 125; × A. roseum, 95; × Apollo, 130; aureum (× D. sanguinolentum), 196; (× D. × splendidissimum grandiflorum) 93; × Backhousei, 110; Bensonæ album, 219; Brymerianum (× Dalhousieanum), 308; × Burberryanum, 80, 93; × Clio, 130; cœleste, 267, 292; × Cordelia, 94; crassinode Barberianum, 65; crystallinum Statterianum, 258; Dearei, 122; densiflorum (× D. nobile), 110; d. (× D. tortile), 146; Devonianum, 129; Falconeri, 173, 219; (× D. nobile), 146; infundibulum, 158; × Kenneth, 93; longicornu majus, 283; Lowii, 219; Maccarthiæ, 121; nobile, 14, 104, 215; (specimen), 209; n. giganteum, 99; n. Hutchinson's variety, 127; n. virginale, 145; Papilio, 208; Phalænopsis, 149, 281, 283, 290, 321, 363; (insects injuring), 200; P. albens, 374; P. album, 373; P. roseum, 374; primulinum giganteum, 124; speciosissimum, 283, 374; speciosum, 248; s. Bancroftianum, 62; spectabile, 206; × splendidissimum grandiflorum, 95, 123; × s. nobilius, 124; Statterianum, 258; subclausum, 94; taurinum, 304; t. amboinense, 304, 349; thyrsiflorum, 158; veratrifolium, 121; Victoria-Regina, 196, 208, 226, 227, 254, 255, 277, 286, 291, 292; Wardianum, 95, 104, 130, 246, 265; × Wiganiæ, 78.

Dendrobium, blue, 292; hybrids, 76, 146; seedlings, 83.

Dendrobium beetle, 230.

Dendrobiums, 121, 150, 173, 247; (in season), 85.

Diacrium bicornutum, 142, 175; (× Epidendrum radicans), 301.

Diaxenes dendrobii, 231.

Disa graminifolia, 181; grandiflora, 54; (fertilisation of), 103; Harveiana, 180; × kewensis, 221; lugens, 180.

Disa, butterfly fertilising, 103.

Disas, 279.

Dies Orchidianæ, 5, 40, 67, 100, 135, 165, 196, 226, 259, 292, 354.

Diseases, 120, 129, 276.

Dove Orchid, 248.

EPICATTLEYA, 240; × guatemalensis, 111; × matutina, 110, 127, 274.

Epidendrum bicornutum, 70; bituberculatum, 142; ciliare, 115, 272; decipiens, 264; × dellense, 274; Endresii, 124, 125; Frederici-Gulielmi, 114; fulgens, 264; Mantinii, 348; Matthewsii, 285; Moseni, 264; nemorale, 255; × O'Brienianum, 274; × O'Br. roseum, 161; radicans, 115, 230, 273, 274, 301; (× Wallisii), 301; (hybrids of), 301, 327; × radico-vitellinum, 301, 314; rhizophorum, 274; Schomburgkii, 264; S. confluens, 264; Stanhopeanum, 267; varicosum, 126; vitellinum, 114, 229, 230; v. majus, 283, (× Odontoglossum crispum), 114, 157; Wallisii, 114; × Wallisio-ciliare, 2, 115; × xantho-radicans, 126.

Epidendrums, 91.

Epilælia × Hardyana, 115; × radico-purpurata, 229, 232, 256, 273, 274.

Epileya, 239.

Epiphaius, 240.

Epiphronitis × Veitchii, 274.

Epiphytes, 70.

Eriopsis Helenæ, 267.

Eulophiella, 109; Elizabethæ, 59; Peetersiana, 67, 100, 206.

Evans, H. B., Esq.'s collection, 294.

Exaggerations, 9.

FERTILISATION, process of, 326; self-fertilisation, 328.

Flies carrying pollinia, 134.

Flowering, exhaustion caused by, 293.

Flowers, dried, 267.

Fogs, 309.

Food supply, 13, 105, 107, 293.

Fungicides, 276.

Fungus parasites, 276.

GENERA of Orchids, 6.

Geodorum Augusti, 221.

Glœosporium cinctum, 276.

Gongora (an albino), 201; nigrita, 201.

Gongoras, 106.

Goodyera Rollissoni, 287.

Gorgoglossum, 203; Reichenbachianum, 203.

Grammatophyllum speciosum, 226, 259, 268, 287.

Grimsdale, D. M., Esq.'s collection, 335.

Guano, 251, 325.

HALL mark, 302, 303.

Hansen, *The Orchid Hybrids*, 239.

Hurst, curious crosses, 179, 365; curiosities of Orchid breeding, 326.

Hybrids, closely allied, 275; natural, 328; treatment of, 282; true from seed, 1.

INSECT enemies, 144.

Intractable subjects, 12, 13, 54.

KRAENZLIN, *Orchidacearum Genera et Species*, 236.

LÆLIA × amœna, 62; anceps, 36, 119; (× Lycaste Skinneri), 179; a. Bradshawiana, 33; a. Kienastiana, 92; a. morada, 66; a. Mrs. De B. Crawshay, 62; cinnabarina, 82, 140; (× Cypripedium caudatum Wallisii), 139; (× Cypripedium × Sedenii candidulum), 139; crispa, 284; Digbyana, 83, 140; × Exquisite, 62; flava, 60; × juvenilis, 28; × Latona, 99; longipes, 112, 351; l. alba, 112; Lucasiana, 112, 351; × Lucy Ingram, 62; majalis, 119; monophylla, 284; × Omen, 29; Perrinii alba, 350; præstans alba, 347; p. a. E. Ashworth, 30; pumila, 343, 354; (× Cattleya Harrisoniana), 287; p. albens, 349; p. Low's variety, 349; p. magnifica, 351; p. præstans, 291, 316; p. p. Gatton Park variety, 319; purpurata, 249; p. Annie Louise, 346; p. Ashworthiana, 168, 189; p. blenheimensis, 315; p. fatuosa, 189; p. grandis, 220; p. Leemanni, 220; p. Mrs. R. I. Measures, 350; rubescens, 126; × splendens, 318; tenebrosa (Janus-like), 194; t. Charlesworthii, 252; t. nigrescens, 220; t. Victor Warburton, 252; xanthina (× Cattleya Dowiana aurea), 208.

Lælia × Cypripedium, 139.

Lælio-cattleya, 239; × albanense, 308; × Andreana Gazelle, 318; × Aphrodite, 223; × A. Queen-Empress, 219, 220; × Apollonia, 29; × Baroness Schröder, 228; × Broomeana, 299; × Bryan, 358; × callistoglossa, 316; × Canhamiana albida, 255; × Canhamiana var. Lady Wigan, 169, 190; × C. G. Roebling, 112, 193; × Cicero, 112; × Cypheri, 313; × Daphne, 375; × Darwiniana, 239; × Decia alba, 29; × Diarmid, 351; × Digbyano-Trianæ, 132, 157; × Electra, 190; × elegans, 119, 285; × e. Bluntii, 284; × e. Cauwenbergiana, 315; × e. chelsonensis, 316; × e. Novelty, 220; × e. Schrœderiana, 285, 290; × Elsteadensis, 239; × Empress of India, 222; × Eudora superba, 223; × Ghislainiæ, 239; × Gottoiana, 308, 362; × G. marmorata, 362; × Harrisoni-præstans, 287; × Hippolyta, 253; × H. Dulcote var., 184; × illustris, 348; × Juno, 287;

Lælio-cattleya

× Lucilia, 348; × massiliensis, 358; × Nysa splendens, 345; × Nysa superba, 315; × odorata, 348; × Radiance, 287; × Regina, 62, 112; × Robin Measures, 277, 287; × Rosalind, 31; × Ruby Gem, 287; × Sanderæ, 287; × Schilleriana, 163, 360; × S. Ashworth's variety, 28; × Semiramis, 31; × Stelzneriano-Hardyana, 360; × Thorntoni, 339; × Tiresias, 29; × tyntesfieldense, 169, 189, 222; × Veitchiana, 358; × velutino-elegans, 253; × Venus, 62; × Violetta, 94, 112.

Lawrence, Sir T.'s collection, 206, 330.

Leaves, absorption by, 234.

Lepidoptera carrying pollinia of Orchis pyramidalis, 134.

Lime and soot, 43, 106, 108, 251.

Limodorum eburneum, 20.

Lindley Medal, 354, 355.

Lissochilus giganteus, 295.

Lueddemannia Pescatorei, 158; Sanderiana, 299.

Luisia Cantharis, 168.

Lycaste Denningiana, 319; Skinneri, 99, 182; (× Lælia anceps), 179, 367; (× Lælia glauca), 179, 367; S. alba, 98; S. armeniaca, 2; S. pulcherrima, 125; Youngiana, 373.

Lycastes, 139, 172.

MACODES Sanderiana, 191.

Magnesia, carbonate of, 271.

Manchester and North of England Orch'd Society, 154, 181, 219, 252, 283, 314, 345, 372; (Gold Medal of), 316, 374.

Manchester Royal Botanic Show, 217.

Manure for Orchids, 43, 251, 262, 293, 324, 358; (aërial), 325; (water), 106.

Masdevallia attenata, 304; × Chamberlainiana, 41; deorsa, 206; × Kimballiana, 123; Laucheana, 303; × Pourbaixii, 123; × Shuttryana, 41; tovarensis, 24; (pink-tailed variety), 212, 370; Veitchiana grandiflora, 284.

Masdevallias, 24, 116, 207.

Maxillaria grandiflora, 155; g. alba, 32; Houtteana, 155; lepidota, 30.

Menaris tulbaghica, 103.

Mesodactylus, 238.

Miltonia × Bleuana, 59; × Bluntii Peetersiana, 319; cuneata, 155; Roezlii, 59; R. alba, 131; spectabilis atrorubens, 315, 316; s. Moreliana, 317; s. radiata, 219; vexillaria, 25, 88; v. Daisy Haywood, 222.

Miltonias, 89.

Models of Orchids, 352.

Mormodes, 151; badium var. luteum, 61; luxatum, 50; l. eburneum, 49; l. punctatissimum, 51.

NAMES, alteration of, 6, 42; botanical, 300; duplication of, 100, 112; latinising, 300; unnecessary, 7; vernacular, 41.

Natural conditions, 13, 14, 107.

Neottia Nidus-avis, 187.

Neottieæ, 69.

Neuwiedia Curtisii, 237; Lindleyi, 237; singapureana, 237; veratrifolia, 237.

Nomenclature, 41, 227; (go-as-you-please policy), 166; of varieties, 166.

Notes, 1, 33, 65, 97, 129, 161, 193, 225, 257, 289, 321, 353.

Novelties, 208, 267, 299.

Nun Orchid, 48.

ODONTOGLOSSUM × acuminatissimum, 111; Alexandræ, 73; × Andersonianum, 372; × A. Bogaerdianum, 184, 305; × A. Danehurst var., 156; × A. egregium, 162; × A. leucochilum, 31; apterum, 225; a. candidulum, 2; bictoniense, 317; × cirrho-Hallii, 125; citrosmum, 149; cœleste, 292; constrictum Sanderianum, 321; × Cookeanum, 99; × C. Valentinei, 94; × Coradinei mirabile, 186; × C. Roeblingianum, 130, 220; × C. Rosefield var., 98, 265; × C. waltonense, 252; × crispo-Hallii, 5, 10, 28; crispum, 73, 99, 100, 183, 189, 244, 245, 262, 265, 369; (at Pacho), 45; (destruction of), 47; (naturalisation in Jamaica), 45; (What constitutes?), 73; c. Ami Charles, 125; c. Annie, 163, 182, 188; c. apiatum, 166; c. ashlandense, 2; c. bellissimum, 346; c. Chestertoni, 74, 75; c. Crawshayanum, 221; c. Duvalii, 166; c. giganteum, 252; c. Golden Queen, 73, 74, 113, 143; c. heliotropium, 131, 158; c. Henry Steel, 285; c. Imperator, 81; c. Kegeljani, 125; c. Luciani, 127; c. ocellatum, 74; c. Peetersii, 191; c. Queen Victoria, 190; c. roseum, 98; c. Starlight, 189; c. Stevensii, 61; c. Sunlight, 350; × deltoglossum, 130; × Denisoniæ, 5, 10, 165; × excellens, 5, 111, 127; × e. Lowiæ, 159; × e. Richard Ashworth, 189; × e. spectabile, 111; × e. Thompsonianum, 182, 188; grande, 149, 290, 347, 355, 369; (flowers fused), 322, 351; g. Pittianum, 348; Harryanum, 266; Hunnewellianum, 265; Kegeljani, 131; × Leeanum, 126; × Leroyanum, 84; luteopurpureum, 141, 142, 265; l. pallens, 111; × Marriottianum, 125; × mulus lyroglossum, 111; nævium, 265; nebulosum candidulum, 2; odoratum (flowers fused), 35; Pescatorei, 63, 129, 183, 245, 283; P. Harrisianum, 286; P. imperiale, 190; P. Slichachan var., 130, 156; P. Vervaetiæ, 63; × Pittiæ, 165; radiatum

Odontoglossum—

Princess of Wales, 220; × Ruckerianum, 35; × R. ocellatum, 127; sceptrum, 141; s. aureum, 163, 182, 188; s. Masereelianum, 137; Schlieperianum, 283; × Valentinei, 99; × Wilckeanum, 10, 113, 114, 143, 188, 207; × W. Queen-Empress, 143, 155, 165; O. × W. Stevens, 125.

Odontoglossum forests, 100.

Odontoglossums, 15, 176, 212, 250; farming, 100; from Kelvinside, 175; from Newchurch, 137; from Walton Grange, 111; hybrid, 74, 207; (of artificial origin), 5, 10; seedling, 84, 265, 298.

Odopetalum, 240; × Heathii, 240.

Oncidium crispum (flowers fused), 195; flexuosum (× Odontoglossum crispum), 367; Jonesianum, 316; Lanceanum, 283, 284; monachicum, 162; onustum, 315; panduratum, 318; Papilio, 97, 195, 205, 226, 319, 336; tigrinum, 172; (with variegated foliage), 352; Warneri, 184.

Ophrydeæ, 69.

*Orchid Album*, 195.

*Orchid Review*, 8, 9, 36; (New Year's Greeting), 9.

Orchid basket, West's pot-shaped, 137; breeding, curiosities of, 289, 326, 347; New British, 234; certificates, 332; collecting, 144; Committee awards, 40, 68; Jubilee Orchid, 196, 226; leaf rust, 276; Portraits, 32, 64, 96, 128, 160, 192, 224, 256, 288, 320, 352, 376; seedlings, the raising of, 38, 82, 114, 138; stand, an improved, 339; value of a white, 251.

Orchids abroad and at home, 12, 53, 69, 105, 263, 293; ancestral, 69; at Bristol, 294; at Burford, 206; (for many years), 330; at Hamburg, 152; at Gand, 162; at Langley, 229; at the Royal Horticultural Society, 27, 61, 92, 123, 155, 183, 221, 255, 285, 317, 347, 374; (special prizes for 1896), 40, 100, 135; at Sevenoaks, 265; at St. Albans, 307; at Uxbridge, 335; at Messrs. Veitch's, 202; at Weston-super-mare, 297; blue, 196, 226, 292; botanical at Kew, 3, 133, 168, 197, 306; Mr. Bull's annual exhibition, 210; cool, lecture on, 291; covering during severe weather, 341; destructive, collection of, 204, 226; degeneration of, 266, 292, 329, 358; in the Law Courts, 5, 338, 356; leafless, 71; of 1896, 77; of Mason's *Burma*, 323; Dr. Jessop's collection, 226; overcrowding, 330; terrestrial, 69.

Orchiplatanthera × Chevallieriana, 235.

Orchis × Chevallieriana, 235.

Ornithidium coccineum, 228.

Paphiopedium 6; × Aylingii, 37; Chamberlainianum, 361; Charlesworthii, 16, 17; (abnormal), 34; Exul (× Cypripedium Calceolus), 180, 366; × niveo-insigne, 37; Spicerianum, 16; Victoria-Mariæ, 361.

Parish, Rev. C., death of, 322.

Peat, American, 207.

Parthenogenesis, 327.

Pelexia roseo-alba, 352.

Peristeria elata, 248.

Pescatoreas, 55.

Phabletia, 240.

Phaio-calanthe, 240; × Arnoldiæ, 91, 371; × Brandtiæ, 95; × insperata, 351.

Pfan, Ricardo, death of, 109.

Phaius 91; × Ashworthianus, 255, 316; × Cooksoni, 125, 371; grandifolius, 371; (in Jamaica), 48; Humblotii, 229, 283; × hybridus, 124; tuberculosus, 69.

Phaius seedlings, 115.

Phalænopsis, 26, 54, 122, 138, 217, 280, 372; (culture at New York), 177.

Phalænopsis gloriosa, 4; × Hebe, 79, 94; × intermedia, 139; Schilleriana, 355; (group), 178; (in Sulu), 4; × Schilleriano-gloriosa, 4, 36.

Phalanthe, 240.

Phosphates, 272.

Photographs for reproduction, 37.

Phragmipedium, 86; × Cleola, 86; × conchiferum, 86; × Dominianum, 86; × grande, 86; × Saundersianum, 86; × Sedenii, 86; × Stella, 86; × stenophyllum, 86; × unicum, 86.

Phragmipediums, hybrid, 86.

Physosiphon Moorei, 133.

Platyclinis, 174; filiformis, 285; glumacea, 58; uncata, 30.

Pleiones, 91, 213, 279, 342.

Pleurothallis Roezlii, 95.

Portraits — Acineta Barkeri, 376 — Aerides Vandarum, 192—Bulbophyllum barbigerum, 352—Ericssoni, 64, 128—Calanthe × Baron Schröder, 160—Calopogon pulchellus, 256—Catasetum semiroseum, 32—Cattleya elongata, 256; × Grossii, 128; labiata, 128; × massiliensis, 96; Mossæ var. Mondii, 224; M. Rappartiana, 256; × Prince of Wales, 64; Queen-Empress, 224; Schilleriana, 224; Schofieldiana gigantea, 352; Warneri, 128; Warscewiczii var. Mrs. E. Ashworth, 320; Cirrhopetalum Curtisii, 320; Medusæ, 64; robustum, 352—Coelogyne cristata, 192; Sanderæ, 376; sparsa, 320; Veitchii, 32—Coryanthes Fieldingii, 256—

Portraits—
CYCNOCHES chlorochilon, 128, 320 ; Warscewiczii, 128 — CYMBIDIUM Lowianum viride, 224 ; tigrinum, 128 ; Tracyanum, 160—CYNORCHIS grandiflora, 376 ; purpurascens, 288—CYPRIPEDIUM bellatulum, 192 ; × Baron Schröder, 32 ; Chamberlainianum, 352 ; × Chapmanii magnificum, 224, 256 ; ciliolare, 224 ; Exul, 32 ; × Galatea majus, 32 ; Godefroyæ leucochilum grandiflorum, 256 ; × Gratrixianum, 128 ; × hirsuto-Sallieri, 352 ; insigne citrinum, 352 ; × Lathamianum, 128 ; Lawrenceanum Hyeanum, 64 ; × palatinum, 224 ; × Regina, 160 ; venustum Measuresianum, 376 — DENDROBIUM × Ainsworthii, 192 ; chrysanthum, 64 ; Dalhousieanum, 108 ; denudans, 288 ; Devonianum, 128 ; Johnsoniæ, 160 ; × Kenneth, 128 ; longicornu, 128 ; nobile, 96, 160 ; sarmentosum, 128 ; transparens album, 128 ; Victoria-Reginæ 288 ; Wardianum, 96 — DISA pulchra, 64 — EPICATTLEYA × matutina, 160—EPILÆLIA × radico-purpurata, 288 — EPIPHRONITIS × Veitchii, 32, 192, 352 — EULOPHIA guineensis, 320 ; GONGORA trico'or, 160—GRAMMATOPHYLLUM Rumphianum, 32—speciosum, 288, 352 ; HEMIPILIA amethystina, 96—HOLOTHRIX orthoceras, 128 — LÆLIA autumnalis Fournieri, 32 ; × Lindleyana, 224 ; longipes, 224 ; præstans alba, E. Ashworth, 64 ; p. Ashworth's var., 64 ; pumila, Gatton Park variety, 352—LÆLIO-CATTLEYA × Decia alba, 96 ; × Digbyano-Trianæ, 192, 320 ; × Lucy Ingram, 96 ; × Nysa superba, 96 ; × Pallas, 192, 224, 352 ; × Rosalind, 64, 160—LISSOCHILUS milanjianus, 256—LYCASTE Denningiana, 352 ; Skinneri, 192 — MASDEVALLIA coriacea, 96 — MAXILLARIA Houtteana, 192 ; Sanderiana, 96 ; MILTONIA spectabilis Moreliana Dulcote var. 64—ODONTOGLOSSUM crispum Lindeni, 160 ; c. Luciani, 160 ; c. var. Starlight, 224, 256 ; c. var. Queen Victoria, 224 ; grande, 96 ; Hallii nigrum, 32 ; × Wilckeanum Queen-Empress, 192—ONCIDIUM macranthum, 160 PHAIUS × Ashworthianus, 320 — PHALÆNOPSIS amabilis, 160 ; Aphrodite, 160 ; Stuartiana, 128 – RENANTHERA Storiei, 224 SACCOLABIUM bellinum, 352 — SELENIPEDIUM Boissierianum, 64 — SOBRALIA leucoxantha, 320 ; × Veitchii, 288 SOPHROCATTLEYA × Calypso, 32—STANHOPEA Wardii, 64 TREVORIA chloris, 224—TAINIA penangiana, 376 — TRICHOGLOTTIS cochlearis, 128—TRICHOPILIA brevis, 192 ; coccinea, 376 ; suavis, 192, 320—VANDA × amœna, 352 ; Hookeriana, 352 ; Kimballiana, 64 ; K. Lackneræ, 64 ; × Miss Joaquim, 224—ZYGOCOLAX × Veitchii, 96—ZYGOPETALUM Jorisianum, 376
Potash, nitrate of, 271.
Potassium sulphide, 276.
Potting material, 39.
RECORD book, 38.
Reichenbach's Herbarium, 42.
Renanthera coccinea, 70, 116, 331.
Re-potting, 147.
Rhynchostylis cœlestis, Cambridge Lodge variety, 317 ; retusa, 337.
Richards XL.All vaporiser, 212.
Robinow, M., Esq.'s collection sold, 289.
Rolfe, on the Cypripedium group, 6 ; on "Orchids abroad and at home," 12, 53, 69, 105.
Root action, 228, 363.
Roots, aerial, 105, 106, 107 ; erect branching, 270 ; vertical, 106, 107.

SACCOLABIUM Barbeyæ, 84 ; guttatum, 337.
Saccolabiums, 57, 216.
Sarcantheæ, 70.
Sarcochilus Hartmanni. 124 ; luniferus, 107 ; unguiculatus, 168.
Schomburgkias, 70.
Scuticaria Hadwenii, 344 ; Steelii, 344.
Seed parents, 38, 82 ; sowing, 39 ; sown on blocks of pine-wood, 140.
Seedlings, 83 ; basket for suspending, 298 ; on blocks of pine-wood, 140 ; treatment of, 39.
Selenipedium, 6 ; Boissierianum, 42 ; × grande atratum, 253 ; × Hardyanum, 317 ; × L'Unique, 86 ; Sargentianum, 56 ; × Saundersianum, 308, 320 ; × Sedenii, 320.
Selenipediums, 56 ; hybrid, 86.
Smee, on Chemical Composition of Cattleya, 233, 270.
Sobralia leucoxantha, 284 ; macrantha alba, 220 ; m. Hodgkinsoni, 284 ; × roseo-macrantha, 348 ; × Veitchii, 298.
Sobralias, 174, 312.
Soot and lime, 43, 106, 108, 251.
Sophro-cattleya, 240 ; × Batemaniana, 229 ; × Calypso, 3.
Sophrolælia × Crawshayana, 266 ; Marriottii, 28 ; × Veitchii, 229.
Sophroleya, 240.
Sophronitis cernua, 280 ; grandiflora, 116, 138, 230, 280 ; (× Cattleya Harrisoniana), 298 ; (× Phalænopsis Schilleriana), 224 ; violacea, 280.
Spathoglottis, 174 ; × aureo-Viellardii, 192, 223 ; plicata Micholitzii, 229.
Spot, 71, 276.
Sprayer, Stone's patent, 39.
Stanhopea tigrina, 285.
Stanhopeas, 174.
Stages, 44 ; open, 308.
Stauropsis gigantea, 58.
Stenoglottis longifolia, 191 ; l. alba, 176.

TEMPLE show, 165, 185.
Thunia Brymeriana, 195.
Thunias, 89.
Trevoria chloris, 203.
Trichopilia brevis, 60; coccinea, 229; suavis, 376.
Tupistra singapureana, 237.

VANDA Amesiana, 58; × amœna, 320; cœrulea, 28, 54, 345, 373; c. Rochfordiana, 349; cristata var. B., 167; Kimballiana, 58, 317; × Miss Joaquim, 139, 206, 211, 221; × Moorei, 328, 329, 349; pumila, 167; Sanderiana, 7, 21; s. Holmewood variety, 353, 375; teres, 216.
Vandas, 216.
Varieties, are they constant? 63, 136, 183, 200, 244, 262.
Vanilla, 69.
Victoria Medal of Honour, 258, 349, 354.

Warner, Robert, death of, 7.
WARSCEWICZELLA discolor, 130.
Water tanks, 22.
Woodall, E. H., Esq.'s, collection sold, 289.

ZYGOCOLAX, 240.
Zygolax, 240.
Zygopetalum Jorisianum, 348; maxillare, 315; Mackayi (× Lycaste), 327; (× Odontoglossum), 31, 139, 243, 327, 328; (× Oncidium unguiculatum), 139, 243, 327; × Perrenoudii eupertium, 157.
Zygopetalums, 139.

## LIST OF ILLUSTRATIONS.

| | PAGE. |
|---|---|
| Cattleya × Hardyana ... ... ... ... ... ... | *Frontispiece* |
| Cypripedium Fred. Hardy ... ... ... ... ... ... | 17 |
| „ × Vipani var. Corningii ... ... ... ... ... | 241 |
| Dendrobium nobile (specimen plant) ... ... ... ... ... | 209 |
| „ „ virginale ... ... ... ... ... ... | 145 |
| Epidendrum radicans ... ... ... ... ... ... ... | 273 |
| Epilælia × radico-purpurata ... ... ... ... ... ... | 273 |
| Mormodes luxatum eburneum ... ... ... ... ... ... | 49 |
| Odontoglossum × Andersonianum var. Bogaerdeanum ... ... | 305 |
| „ crispum Golden Queen ... ... ... ... ... | 113 |
| „ „ Imperator ... ... ... ... ... | 81 |
| Paphiopedium Chamberlainianum ... ... ... ... ... | 361 |
| „ Charlesworthianum ... ... ... ... ... | 16 |
| „ Spicerianum ... ... ... ... ... ... | 16 |
| Phalænopsis Schilleriana ... ... ... ... ... ... | 177 |
| Rhynchostylis retusa (specimen plant) ... ... ... ... ... | 337 |
| West's Patent Pot-shaped Orchid Basket ... ... ... ... | 137 |

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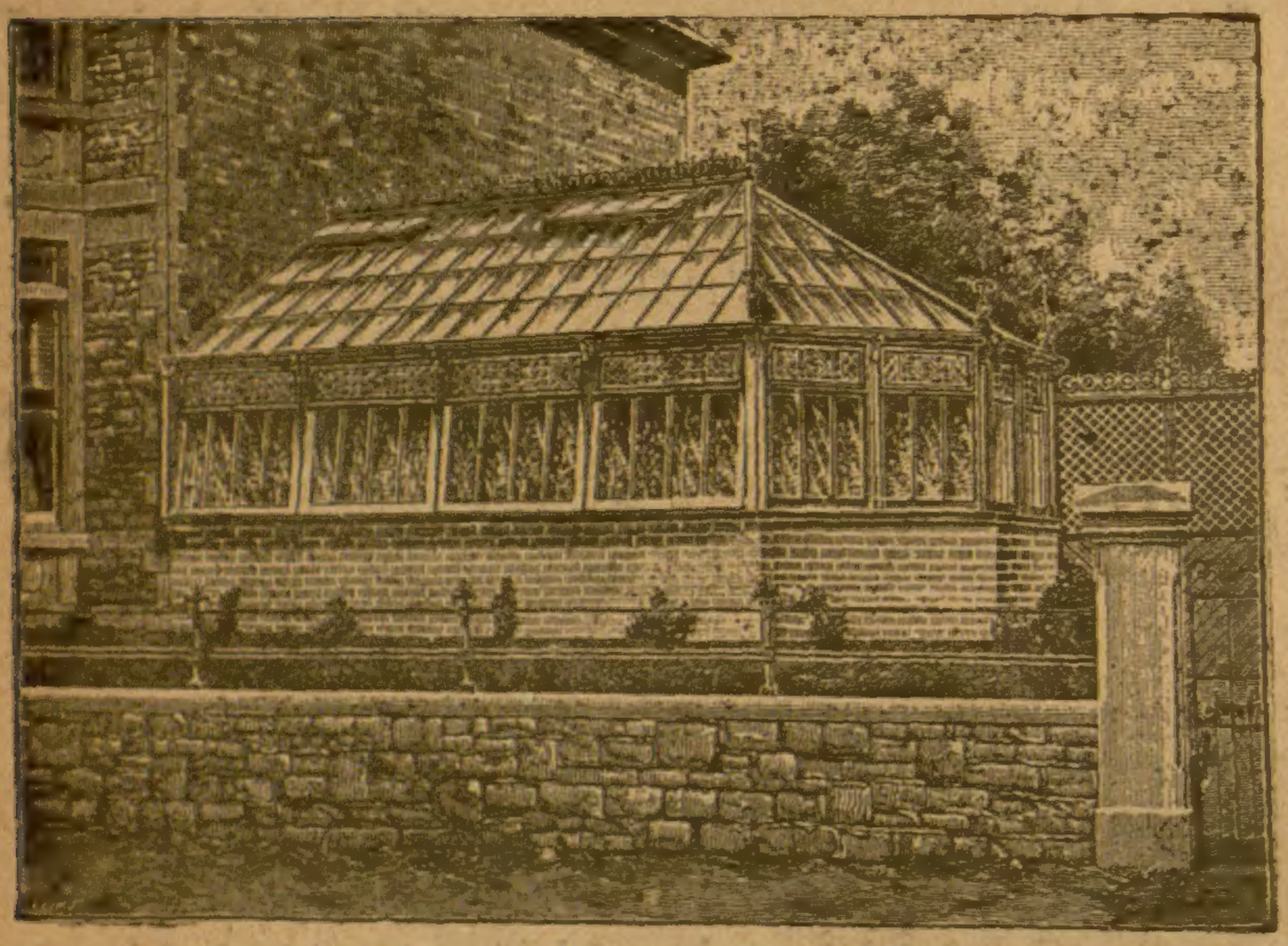

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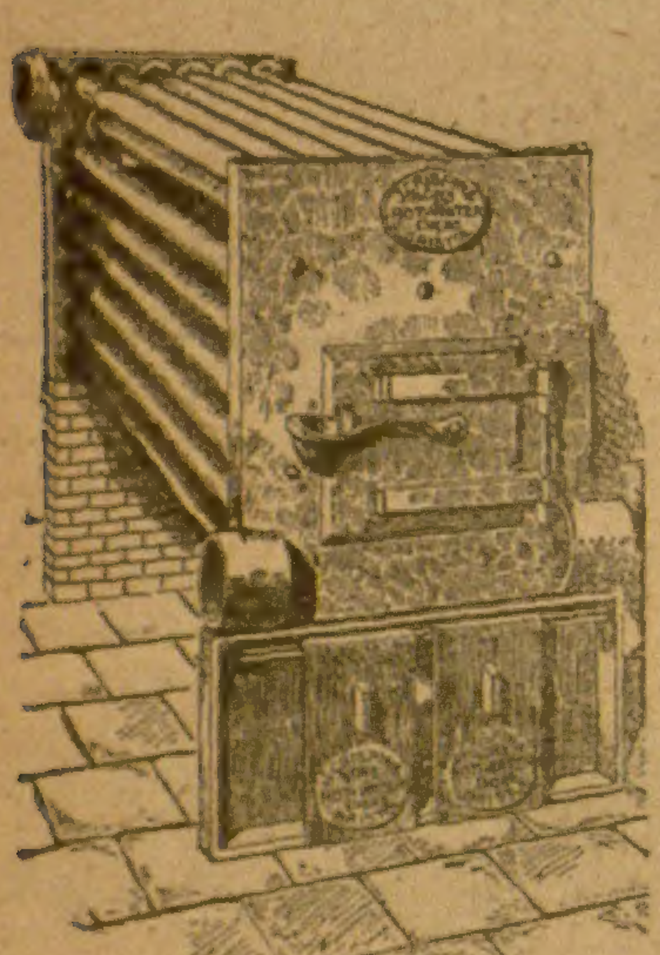

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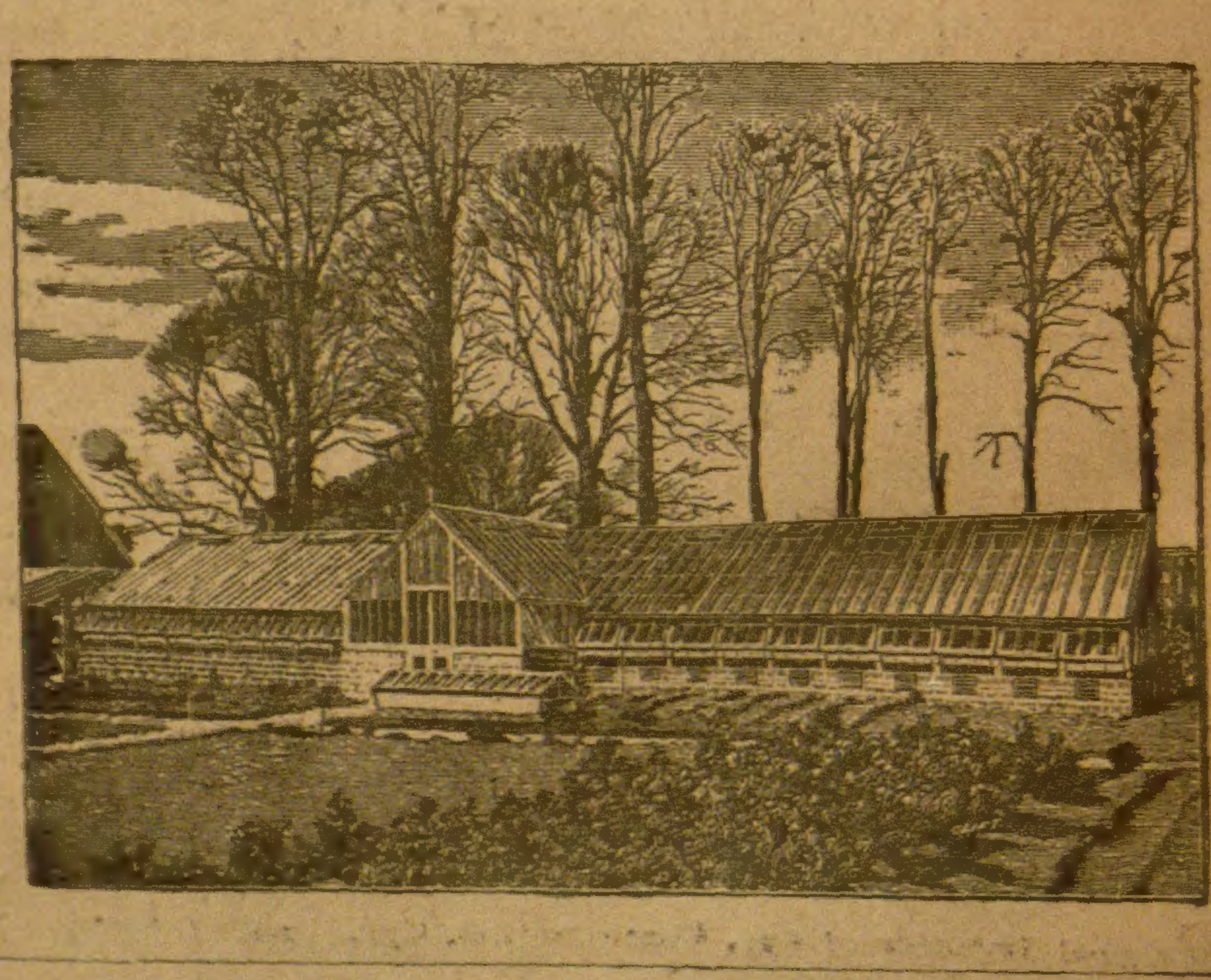

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